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Editorial

Frugivorous Birds

The article by B Rajasekhar should interest many readers. I believe India has more fruit trees than any other part of the world and that is the reason why we have so many frugivorous birds. The article indicates what a lot of work has gone into these observations. When we stayed in Kodaikanal I found it impossible to locate birds in the dense canopy of the Shola forest. It was tantalising to hear their sounds but seldom were they seen. The birds which showed up were the colourful ones like the scarlet minivet and some friendly ones like the greyheaded flycatchers who operated not too high up from the ground. Apart from seed dispersal by birds, we now learn from Africa that fruit Bats play a major role in seed dispersal and regeneration of forests. I hope studies like the present one by Rajasekhar will persuade our Forest Department to play their part in the current movement for biodiversity and plant local species of trees and spend less effort on exotic monocultures.

OSI Conference in November 1995

This is to remind our readers finally about the OSI Conference which takes place at the Indian Council of Agricultural Research at Pusa, New Delhi between 14th and 16th November this year. We have made a request for grants to reimburse persons who cannot afford to cover travel costs from their homes to Delhi and back. Some modest funds have been received and applications could go to our Secretary General, Asha Chandola Saklani, PB 45, Garhwal University, Srinagar 246 174, UP. I hope to see many of our readers at the Delhi meeting.

World Birdwatch 1995

A press release says that the world's biggest bird event will take place on 7th and 8th October 1995. This is coordinated by Bird Life International. Several local groups have apparently been nominated by Birdlife International to conduct these surveys. Computers now make it possible to deduce fascinating facts from data of bird sightings collected from all parts of the world, and I hope there will be a wide response from India. People in the northern region could contact Green Heart, C/o Bablu Dey, Director, P O Kokra Jhar, District Kokra Jhar BAC 783 370, Assam. Mr Asad Akhtar of the BNHS, Bombay, could also be contacted for further information.

Workshops on Field Identification of Birds

Such workshops are being increasingly held by several ornithological groups in India, and I am sure that they result

in an increase in serious birdwatching. It is one thing to enjoy the sight of birds on land, in the water or in the air, in a general way but it gives one special satisfaction to be able to identify the species and then go home and look up details about their personalities. C Sasikumar in his article refers to the ringed plover and the little ringed plover. I recall the broken wing technique of the little ringed plover in Kihim. It was most expertly performed and such behaviour must result in diverting the attention of predators from their nest and young. With regard to the ringed plover, the London Port Authority, endeared itself to ornithologists by stopping work on a section of their project to enable this bird to complete nesting operation.

Back from the Brink

A news items supplied by the Centre for Environmental Education, Ahmedabad, says :

Washington : A ban in the use of DDT, a captive breeding programme and re-introduction of captive-bred individuals into the wild have helped the peregrine falcon of America make a come-back from extinction.

This elegant bird of prey which hunts down birds on the wing for food is the fastest flier on earth. While swooping down on its prey it can touch speeds upto 350 km/hr. It is highly valued in Europe and the Arab nations where falconry is popular. A winter visitor to most parts of the Indian sub-continent, the peregrine falcon does not, however, breed in India.

The bird was an early victim to the widespread use of DDT. DDT ingested by a host of animals lower down the food chain, finally accumulated in the tissues of these birds in sufficient quantities to interfere with their breeding. The

poison weakened their egg shells which broke when the birds sat on them to incubate. Things became so bad for the falcon that it was bound to have almost disappeared from the wild.

Thanks to conservation measures, today there are 1,300 nesting pairs in USA. According to a report in 'New Scientist', the bird is about to be taken off the endangered species list, for scientists are convinced that it no longer needs protection.

Hawks and Falcons

Birds of prey are very difficult to identify. Even differentiating between falcons and hawks (Falconidae and Accipitridae) is a problem. In the Pictorial Guide information is given relating to the characteristics of these two groups, but look at the net result tabulated below. The only clear distinction between the two groups is that falcons (for example, peregrine, kestrel, redheaded merlin) have long pointed wings; and hawks (e.g. pariah kite, shikra, Indian whitebacked vulture), have rounded wings. Apart from this the guidelines do not help very much.

Differences between Hawks and Falcons

	Falcons	Hawks
Wings	Long and pointed	Rounded
Bill	Short strongly hooked and toothed	Short with upper mandible longer than lower
Food	Birds, rodents, insects	Flesh of animals self killed or carrion
Plumage	Confusing	Confusingly different adult and juvenile plumage
Nests	Trees and cliffs	Trees and crags



Observations of Frugivory on *Michelia nilagirica* – A Shola Forest Tree

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Introduction

Frugivores are capable of influencing local floral composition, causing successional changes and are responsible for the distribution patterns of conspecifics in a forest. The study of dispersal systems can be linked to conservation strategies and management practices in the forest (Strahl and Grajal 1991).

The shola forests of South India which are limited to altitudes over 1700 m in the Nilgiris, Palnis and Annamalais (Meher-Homji, 1967), are poorly represented by specialist frugivorous birds, compared to other lowland forests (Khan, 1979 and Meena et al, 1993). Yet, the shola tree species are predominantly dispersed by animals (Meher-Homji, 1975). The maintenance and regeneration of the sholas thus depends a great deal on the availability of dispersers. The following study looks at the dispersal strategy of a bird dispersed shola tree, *Michelia nilagirica* and the feeding assemblages attracted to its fruit crop.

Methods

Study site: The study was carried out between the 26th May and 6th June 1993 before the onset of the South West monsoon in the upper Nilgiris. The particular tree on which most of the observations were done was at Thai shola, about 2100 m above MSL. These observations were augmented by a visit to the Avalanche shola where more fruiting individuals were observed. Thai shola is one of the largest sholas in the Nilgiris.

Observations on the tree canopy were made from a point higher up on the hill slope, using a 7 x 50 binoculars. Half hourly counts of the bird assemblages were done to estimate the visitation rates. The average number of birds at any point of time on the canopy was obtained by dividing the total number of each species seen on the canopy by the number of counts done i.e. 12.

Since only two species mainly fed at the tree, no data on temporal variations in visitation rates was collected. Since the birds could not be tracked about easily in the canopy, an indirect method for time spent on the canopy was used wherein the times of entry and departure of any species and sex as for example in the case of the Nilgiri verditer flycatcher was noted and the time spent by an average individual of that species was calculated as the difference in times of entry and departure (Wheelwright, 1991). The rates of feeding are determined by clocking the time taken to remove fruits and the number of attempts per unit time (Foster, 1987).

Fruit crop estimation was done by sampling one metre long branches and extrapolating to the entire canopy. Fruit fall below the canopy was determined by laying 1 sq mt quadrats below the canopy and counting all the fresh, decaying and infected fruits. Relative abundance of the birds was determined from regular bird trails in the shola.

Observations

Natural History of the tree

Michelia nilagirica is a member of the temperate family Magnoliaceae. The tree is restricted to altitudes above 5000 ft and is seen in the shola forests of Nilgiris, Palnis and even in Ceylon (Fyson, 1974). It attains an average height of 10 m and is usually seen at the edges of the shola patches (Lengerke and Blasco, 1989). The average inter tree distance in this shola was 15.6 m ($n = 15$). While deeper inside the shola no individuals were recorded in a 1 ha sample (Suresh, pers. comm.). The fruiting season was from

April through June (Bourdillon, 1908). The fruit is an aggregate of pale green follicles which resemble the arillate bird dispersed fruits of the tropical rain forests. The follicles open with a vertical slit, revealing a brilliant red aril which wholly encloses a black seed and is inseparable from it. The size of the seed with the encapsulating aril is 0.59 ± 0.07 cm by 0.45 ± 0.07 cm ($n = 26$). The aril is fleshy, sweet with a slight bitter mango flavour. The fruits remain on the tree for a considerable time.

The average number of seeds with aril per follicle was 1.3 and the number of follicles in an aggregate were 13.93 ± 9.15 . There were about 383 such aggregates per 1 m of branch. Extrapolating this to a 10 m tall tree with a crown diameter of 12 m gave a fruit crop of 328614 fruits (one fruit had one seed).

Feeding assemblages

Birds ranging in size from 10 cm to 25 cm were observed feeding on the fruit (Table 1). Their beak lengths were highly variable. In all there were 11 visitor species of which only 9 were actually seen consuming the fruit. Two species were responsible for 72% of the observed fruit removal (The Nilgiri verditer flycatcher — 58.08%, The blackbird — 14.34% and the white eye — 5.59%). Surprisingly of the 9 species that fed on the fruit, none were solely frugivorous though neighboring trees of *Cinnamomum* attracted some specialist frugivores like the Nilgiri wood pigeon and the small green barbet. The species that accounted for most of the fruit removal was an insectivorous bird (Ali and Ripley, 1986).

Table 1 : Feeding Assemblages on *Michelia nilagirica*

Sl. No.	Species	No. of individuals (Average)	Rate of fruit removal $x \pm S.D$	Time spent on canopy $x \pm S.D$	Relative abundance in the shola (%)	Size of bird (cm)	Beak length (mm)	Food habits
Data from Handbook of Indian Birds, S. Ali and Ripley.								
01.	Nilgiri verditer flycatcher (<i>Muscicapa albicaudata</i>).	8.3	32.8 ± 15.25 49.3 ± 26.45	314.54 ± 182.4	7.27	15	13-15	Insects and some berries
02	Blackbird (<i>Turdus merula</i>)	2.05	27.70	150.14 ± 91.91	4.36	25	25-28	Partial frugivore
03	White-eye (<i>Zosterops palpebrosa</i>)	1.25	---	--	7.27	10	13-15	Insects and fruits
04	Quaker babbler (<i>Alcippe poioicephala</i>)	0.80	---	--	2.62	15	15-16	Insectivore
05	Nilgiri laughing thrush (<i>Garrulax cachinans</i>)	0.40	---	--	2.18	20	22	Partial frugivore
06	Black bulbul (<i>Hypsepetes madagascariensis</i>)	*	--	--	4.36	23	24-29	Frugivore (nonspecialist)
07	Redwhiskered bulbul (<i>Pycnonotus jocosus</i>)	*	---	-	0.87	20	17-20	Frugivore (nonspecialist)
08	Grey tit (<i>Parus major</i>)	\$	--	-	2.47	13	10-12	Insectivore
09	Yellow cheeked tit (<i>P. xanthogenys</i>)	\$	---	--	0.29	14	12-14	Insectivore

*-only 2 sightings, \$-only 1 sighting in 6 Hrs.

Modes of Feeding

All the species gulped the entire fruit, swallowing the seed with the aril. The Nilgiri verditer flycatcher picked off fruit on the wing by sallying down and hovering with the fruit in its beak. Often it gave up unable to free the fruit from the follicle.

The blackbird, a partial frugivore, hopped to the end of the branch and picked the fruit. Thus it was restricted only to branches that could bear the birds weight. Quite similar modes of feeding were observed by the Nilgiri laughing thrush and the black bulbul. The blackbird and the laughing thrush also fed on fallen fruits from the ground.

There were no discernable patterns of temporal variations in the visitations by the birds, but most of the rarer visitors usually came after 900 hours late in the morning. The Nilgiri laughing thrush was generally noticed after 1000 hrs and was always solitary. On the average there were 8.3 Nilgiri verditer flycatchers, 2.05 blackbirds, and 0.4 Nilgiri laughing thrushes on the canopy at any point of time. The white-eyes and quaker babblers visited the tree in flocks of 5 to 10 birds. The grey tit, Red whiskered bulbuls and the yellow cheeked tit were rare visitors. The Nilgiri flowerpecker and the black and orange flycatcher visited the tree, but it is not known if they consumed the fruit. In all the Nilgiri verditer flycatcher, followed by the black bulbul and the blackbird were the most abundant species. Other common species were the Nilgiri wood pigeon, white eye and the grey headed flycatcher.

Time spent on canopy

The number of attempts per minute to pick fruit were 6 and 4 respectively for males and females of the Nilgiri verditer flycatcher. However there was no significant difference between males and females in rates of fruit removed: 32.8 ± 15.25 ($n = 5$) for males and for females: 49.33 ± 26.45 seconds ($n = 7$), $t = 1.24$, $P = 0.05$. The average time spent on the canopy by this species was 314.54 ± 182 seconds ($n = 39$).

The Blackbirds picked off fruits at the rate of 27.7 seconds per fruit ($n = 5$). They also spent comparatively short time on the tree, 150 ± 91.91 seconds ($n = 7$). The other species visited the tree too seldom during the study to give any proper estimate.

Competition and predation

There were no discernable activities of either inter or intra-specific competition and aggression amongst the feeding conglomeration. However on two occasions, once a shikra and the next time an unidentified raptor flew overhead and immediately all the birds left the tree. The Nilgiri verditer flycatcher flew off to neighbouring trees, while the blackbirds and the Nilgiri laughing thrushes used to dive down into the understory vegetation. This was also their usual mode of departure.

The feeding activity at the tree was very periodical or cyclical. Starting with the gradual build up of Nilgiri verditer flycatchers, followed by the blackbirds and other species, feeding took place in bouts of 27.45 ± 3.35 minutes ($n = 6$) after which for about 5.0 ± 2.4 minutes there were no birds on the tree. Such periodical half hourly bouts of feeding with 5 minute gaps were quite distinct.

Seed predation and seed fall below the canopy

The number of seeds per sq mt averaged about 9.3 ± 5.31 ($n = 3$). With a canopy diameter of 12 metres, the area of seed fall was 113.1 sq mt. All the seed collected had been attacked by fungus and no viable seeds were found. No seed predation was observed.

Discussions

Snow (1981) classifies *Michelia sp.* as a non-specialist dispersed tree. My own observations seem to support the fact that its main dispersers are insectivorous and other partially frugivorous species.

Crop quantity : The cornucopia of fruit produced in a short fruiting period (1 month) eliminated all sorts of inter or intra-specific competition and is very characteristic of the generalist strategy (McKay, 1975).

Fruit quality : The small size of the fruit, red coloration attract a wide variety of birds. The low sugar quantity, the lauraceous flavour, and slight bitter taste are not truly a generalist quality. The relatively dry nature of the fruit may be due to the low water demands in these cold and wet cloud forests. Detailed nutrient analysis could prove or disprove the above.

Edge habit of the tree: Another predominantly insectivore dispersed tree, *Stemmadenia donnell-smithii* was also an edge habitat preferring species (McDiarmid et al, 1977). In the same study, McDiarmid et al. showed that insectivores are abundant along the edges of the forest and it is mainly these generalists that help in colonisation of newer habitats. Morton (1973) describes edge trees as short lived, small seeded trees dispersed by small sized birds. Frugivory on *Michelia sp.* is a good example of such a fruit searching vs edge habit correlation.

Dispersal strategies: The timing of the fruiting season to just before the onset of the monsoons may be to ensure availability of moisture for the seedlings. Also this is the period when the nestlings of the Nilgiri verditer flycatcher and many other shola birds have just fledged from the nest. Thus the fruit may serve as an easy source of nutrition to an inexperienced population. The tree in turn benefits from the larger dispersal population.

Fruit characteristics : The inseparable aril from the seeds may prevent fruit thieves which consume the aril alone and discard or regurgitate the seed below the canopy itself. Thus the fruit is so designed as to increase the dispersal distance of the seed where its viability is maximised (Janzen 1969). Seed fall below the canopy was

only a small percentage of the crop (1%). Moreover some of the birds removed most of the fallen fruits. The relatively long time the fruits remained on the canopy was to ensure their removal by the birds.

Nature of the dispersers : The two main dispersers, the Nilgiri verditer flycatcher and the blackbird move about a lot between sholas (Per. obs.), in fact where I was staying about 5 km from any patch of shola, blackbirds and white eyes used to frequent a Plum tree there.

Time spent on the canopy : The relatively short time the birds spent on the tree reduces the probability of defecation or regurgitation of seeds below the canopy of the parent tree. Though the Nilgiri verditer flycatcher and the blackbirds took the same number of fruit during time they spent on the tree, the larger sized blackbird spent lesser amount of time on the canopy. However as per frugivory hypothesis, larger birds should spend longer time on the canopy (Howe 1979). Perhaps, there is not significant difference in sizes between the blackbird and the verditer flycatcher. The verditer flycatcher may be risking a longer stay on the canopy due to its safety in numbers. The more conspicuous males of the verditer flycatcher did not have a faster rate of fruit removal than the females. Wheelwright (1991) study in Costa Rica too showed that more cryptic birds did not take advantage of their relative safety by spending more time in fruiting trees.

The cyclical or periodic bouts of feeding might be to reduce predation risks. This is advantageous to the tree in that the predation risk limits the time spent in the canopy and thereby reduce the probability of defecation of seeds below the parent tree.

Non availability of specialist frugivores : The shola forests have a fragmented nature and also the high altitudes are responsible for the poor species diversity. The poor species diversity, coupled with the temperate climate may result in greater abundance of generalist species. It may be these insectivorous species and partial frugivores that may be playing a major role in the dispersal of many endozoochorous tree species. Partial frugivory occurs in several species thought to be insectivorous as in the case of tropical vireos (Morton 1973). Also the generalist dispersers are not poorer dispersers compared to specialists, (Howe 1986). The importance of birds for the dispersal of *Michella* is very clear from the fact that all fruits that fell below the canopy were attacked by fungus. The viability of seeds devoid of the aril or those that passed through the gut was not tested.

Many of the shola birds thought to be primarily insectivores may be frugivorous to a considerable extent in the sholas due to unavailability of other frugivores. Their role in the dynamics of shola forests needs consideration.

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References :

- Ali, S. and Dillon Ripley (1987). Handbook of birds of India and Pakistan., Oxford Univ. Press. Delhi.
- Blake, J.G. et al. (1990). Quantifying abundance of fruits for birds in tropical habitats. *Studies in Avian biology*. No.13:74- 77.
- Howe, H.F. (1979). Fear and Frugivory. *Am.Nat.* 925-931.
- Howe, H.F. (1986). Seed dispersal by fruit eating birds and mammals. Chap.4.123-190. in *Seed dispersal*. Ed. David Murray, Acad. Press.
- Fyson, P.F.(1932). The flora of South Indian hill stations. Vol.I Mds.
- Khan,M.A.R.(1979). A comparative account of the avifauna of the sholas and the neighbouring plantations in the Nilgiris. *JBNHS Vol 75, : 1028-1036*.
- Lingereke, H.J. and Blasco, F. (1989) *The Nilgiri Environment*. Chap 2, 20-78, *The Blue mountains*. Ed. Paul Hocking, OUP.
- McClarmid et al. (1977). Dispersal of *Stemmadenia donnell-smithii* (apocyanaceae) by birds. *Biotrop.* 9(1) : 9-25
- Meena,U and B. Rajasekhar. (1993). Birds of Thai Shola, *Newsletter for Birdwatchers*. Vol.33, No.2.
- Meher-Homji, V.M. (1967). Phytogeography of South Indian hill stations. *Bull. of Torrey Bot. Soc.* Vol 94 No.4
- _____ (1975). On the montane species of Kodaikanal, South India. *Phytocoenologia* 2(1/2) 28-39 Stuttgart-Lehre.
- Morton, E.S. (1973). On the evolutionary advantages and disadvantages of fruit eating tropical birds. *Am. Nat.* Vol 107. No.953. (8-23).
- McKey, D.(1975) The ecology of coevolved seed dispersal systems. in L.E. Gilbert and P.H. Raven (Eds.) *Coevolution of animals and plants*. Pg. 159-191. Univ of Texas Press.
- Snow, D.W. (1981) Tropical frugivorous birds and their food plants. A world survey. *Biotrop.* 13(1) : 1-14.
- Strahl, S.D. and Alejandro Grajal (1991) Conservation of large avian Frugivores and management of neotropical protected areas. *Oryx*. Vol. 25 No.1.
- Wheelwright, N.T. (1991). How long do fruit eating birds stay in the plants where they feed ? *Biotrop.* 23(1) : 29-40.



Birds of the Coimbatore Zoological Park Site at Anaikatty, Western Ghats

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The Western Ghats support most of the biological diversity found in Peninsular India. About 342 species of birds have been reported from this region (Daniels, Unpubl.). For most of these species, information on their distribution is lacking. Check-lists provide valuable presence/absence data that can be used to understand their distribution pattern. Often, check-lists form the basis for further detailed studies on species diversity, community structure, ecology, etc.

The Coimbatore Zoological Park Society, founded in the year 1986, is establishing a conservation facility at Anaikatty in the Nilgiri Biosphere Reserve (NBR), about 30 km away from Coimbatore, India. The society has selected NBR itself as the theme of the new park and so the zoo will function as an interpretation centre for NBR (Rangaswamy and Walker, 1992). A research project on "campus bio-diversity" was

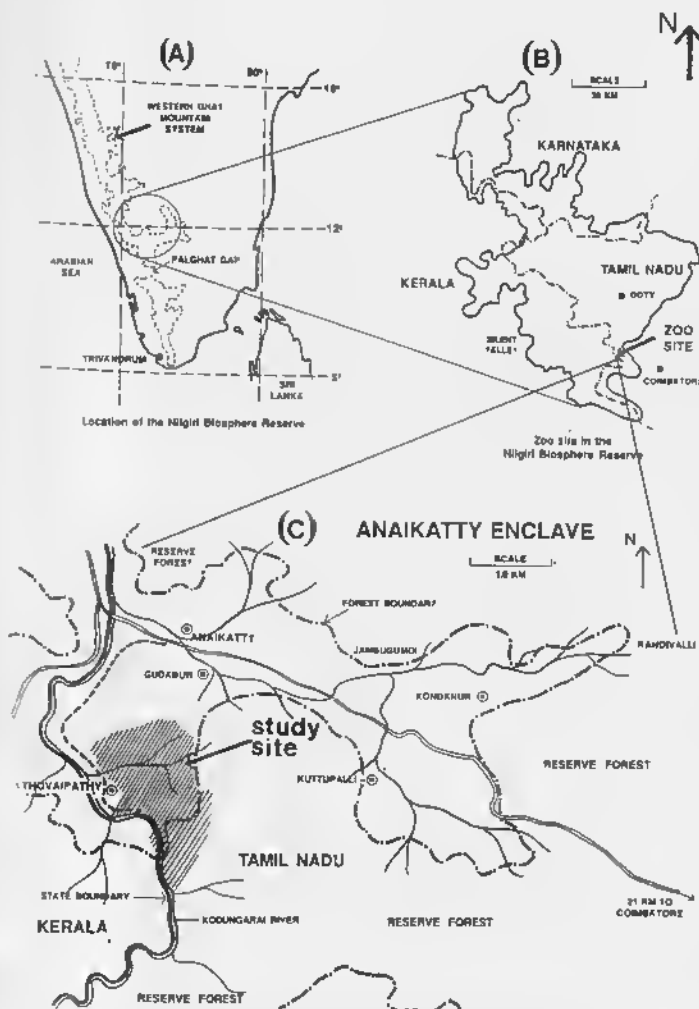
launched in the year 1992 to document floral and faunal wealth of the site and the adjoining reserve forest. This paper deals with the checklist of birds of the area.

The study area is the Thuvaipathy part of Kodungarai Valley (Pallam) in the Anaikatty enclave (Fig.). The study area is composed of three regions: the barren 250 acre zoo site, 2 km stretch of the Kodungarai river and part of the Perianaickempalayam Reserve Forest. The Kodungarai river is an annual tributary with water during monsoons, particularly in Northeast monsoon. The terrain is hilly with undulating valleys with an average elevation of about 600-700 metres above MSL. The conservation "facility" is in the rain shadow area of the Western Ghats, with an average annual rainfall of less than 1000 mm. Much of this falls during the Northeast monsoon between September and November.

The vegetation could be described as dry deciduous scrub (an interphase of dry deciduous forest and thorn scrub). Except for the riverine trees found along the Kodungarai river, trees on slopes show a stunted growth. The major tree species on the slopes include *Albizzia amara*, *A. lebbeck*, *Gyrocarpus* spp., *Pterocarpus marsupium*, *Schleichera trifuga*, *Bauhinia racemosa*, *Cordia obliqua*, *Dalbergia paniculata*, *Limonia alata*, *Tamarindus indica* etc. Presence of species like *Zizyphus* spp., *Cassia auriculata*, *Euphorbia antiquorum*, *Randia demetorum*, *Acacia leucophloea*, *Agave americana*, *Chloroxylon swietenia* indicate a thorn scrub vegetation. *Euphorbia* scrub dominates the deforested rocky slopes of the study area.

Birds sighted were recorded during walks along food-paths and trails. Birds located at a distance were observed using a binocular (Magnification: 8X25). Ali and Ripley's 1983) Pictorial Guide was used for species identification and confirmation. Checklists of birds of the nearby Mukkali area (Pramod *et al*, 1993, Bashir and Nameer, 1993) also served as a guidance to confirm the birds sighted. A provisional list was prepared at the end of 25 days of visit to the site during September 1992 and December 1993. The surveyed area included a mosaic of different land-use/vegetation types namely cultivated fields, reserve forest, riverine forest and scrub jungle.

The study recorded 95 species of birds (Table). Of these blue-winged parakeet *Psittacula columboides* and Nilgiri pipit *Anthus nilghiriensis* were the only two Western Ghat endemics. Resident birds such as black-crowned finch lark, spotted dove and grey partridge were observed breeding. It is of interest to compare this species list with the two lists from the nearby Mukkali area. When compared with our Kodungarai Valley study area at Anaikatty, Mukkali (which forms the buffer zone of Silent Valley National Park) lies at the same elevation of 600



Location of the study area in the Anaikatty enclave (C) of the Nilgiri Biosphere Reserve (B) in the Western Ghats (A).

metres MSL but the vegetation there is more moist (moist deciduous) because of a much higher rainfall. Paramod, *et al* (1993) reported 60 species from Mukkali and 50% of these were recorded during this survey. In a similar study, Bashir & Nameer (1993) recorded 36 species that were not sighted from the core area of Silent Valley but only from Mukkali. The present study recorded 22 of these at this largely deforested Kodungarai Valley. Some of the notable absentees in this area include racket-tailed drongo (*Drongo paradiseus*), bronzed drongo (*Drongo aeneus*), fairy blue bird (*Irena puella*), hill myna (*Gracula religiosa*) and Malabar pied hornbill (*Anthraceroceros coronatus*).

This is only a provisional list and we hope that more species particularly nocturnal birds of prey, will be added later. This will also possibly serve as a base line data for further studies on species abundance and richness.

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References

- All, S. and Ripley, S.D. 1983. A pictorial guide to the birds of the Indian Subcontinent. Bombay Natural History Society/Oxford University Press, pp 177.
- Bashir, C.A. and Nameer, P.O. 1993. Some observations on the birds of Silent Valley National Park. In: *Proceedings of the bird conservation strategies for the nineties and beyond*. (Eds). Abraham Verghese, Sridhar, S and Chakravarthy, AK, pp 131-136.
- Daniels, RJR (unpubl.) *Vertebrate fauna of the Nilgiri Biosphere Reserve*. Unpublished check list.
- Pramod, P., Ramakrishnan, P., and Mathew, DN., 1993. A preliminary study on the bird community of Silent valley area. In: *Proceedings of the bird conservation strategies for the nineties and beyond*. (Eds) Abraham, V., Sridhar, S. and Chakravarthy, AK, pp 15-17.
- Rangaswamy, N. and Walker, S. 1992. A zoo for a Biosphere Reserve: The Coimbatore Zoological Park's education and public relations program. *International Zoo Educators Journal*. No.26 : 24-27.

Table : List of Birds recorded in the study area between September 1992 and December 1993
[1 - reported by Pramod *et al* (1993) and
2 - by Bashir & Nameer (1993) from Mukkali]

No	Common Name	Scientific Name	1	2
1	Pond heron	<i>Ardeola grayii</i>	-	*
2	Cattle egret	<i>Bubulcus ibis</i>	-	-
3	Little egret	<i>Egretta garzetta</i>	-	*
4	White breasted waterhen	<i>Amaurornis phoenicurus</i>	-	*
5	Shikra	<i>Accipiter badius</i>	-	-
6	Brahmini kite	<i>Haliastur indus</i>	-	*
7	Pariah kite	<i>Milvus migrans</i>	-	-
8	Honey buzzard	<i>Pernis ptilorhynchus</i>	-	-
9	Black eagle	<i>Ictiniaetus malayensis</i>	*	-
10	Crested serpent eagle	<i>Spilornis cheela</i>	*	-

No	Common Name	Scientific Name	1	2
11	Black-winged kite	<i>Elanus caeruleus</i>	-	-
12	White-backed vulture	<i>Gyps bengalensis</i>	-	-
13	Grey partridge	<i>Francolinus pondicerianus</i>	-	-
14	Grey jungle fowl	<i>Gallus sonneratii</i>	-	-
15	Peafowl	<i>Pavo cristatus</i>	-	-
16	Common bustard quail	<i>Turnix suscitator</i>	-	-
17	Red-wattled lapwing	<i>Vanellus indicus</i>	-	-
18	Blue rock pigeon	<i>Columba livia</i>	-	-
19	Spotted dove	<i>Streptopelia chinensis</i>	*	*
20	Little brown dove	<i>S.senegalensis</i>	-	-
21	Emerald dove	<i>Chalcophaps indica</i>	*	-
22	Rose-ringed parakeet	<i>Psittacula krameri</i>	*	*
23	Blossom headed parakeet	<i>P.cyanoccephala</i>	*	-
24	Blue-winged parakeet	<i>P.columboides</i>	*	-
25	Lorikeet	<i>Loriculus vernalis</i>	*	-
26	Pied crested cuckoo	<i>Clamator jacobinus</i>	-	-
27	Koel	<i>Eudynamys scolopacea</i>	-	-
28	Eagle-owl (Great horned owl)	<i>Bubo bubo</i>	-	-
29	Brainfever bird	<i>Cuculus varius</i>	-	*
30	Crow pheasant	<i>Centropus siensis</i>	-	-
31	Spotted owl	<i>Athene brama</i>	-	-
32	Common Indian nightjar	<i>Caprimulgus asiaticus</i>	-	-
33	House swift	<i>Apus affinis</i>	-	-
34	Palm swift	<i>Cypsiurus parvus</i>	-	-
35	Lesser pied kingfisher	<i>Ceryle rudis</i>	-	-
36	Small blue kingfisher	<i>Alcedo atthis</i>	-	-
37	White breasted kingfisher	<i>Halcyon smyrnensis</i>	-	-
38	Chestnut headed bee eater	<i>Merops leschenaulti</i>	-	-
39	Common grey hornbill	<i>Tockus birostris</i>	-	-
40	Green bee eater	<i>M. orientalis</i>	*	-
41	Indian roller	<i>Coracias benghalensis</i>	-	-
42	Hoopoe	<i>Upupa epops</i>	-	-
43	Small green barbet	<i>Megalaima viridis</i>	*	-
44	Crimson breasted barbet	<i>M.haemacephala</i>	*	*
45	Golden backed woodpecker	<i>Dinopium benghalense</i>	*	*
46	Singing bushlark	<i>Mirafra javanica</i>	-	-
47	Ashy-crowned linchark	<i>Eremopterix grisea</i>	-	-
48	Black crowned linchark	<i>E.nigriceps</i>	-	-
49	Bay-backed shrike	<i>Lanius vittatus</i>	-	-
50	Brown shrike	<i>L.cristatus</i>	*	-
51	Indian pitta	<i>Pitta brachyura</i>	-	-
52	Black drongo	<i>Dicrurus adsimilis</i>	-	-
53	White-bellied drongo	<i>D.caerulescens</i>	-	-
54	Black headed oriole	<i>Oriolus xanthornus</i>	*	*
55	Ashy swallow shrike	<i>Artamus luscus</i>	-	*
56	Brahminy myna	<i>Sturnus pagodarum</i>	-	-
57	Common myna	<i>Acridotheres tristis</i>	*	*
58	Jungle myna	<i>A.fuscus</i>	*	*
59	Indian tree pie	<i>Dendrocitta vagabunda</i>	*	*
60	House crow	<i>Corvus splendens</i>	-	-
61	Jungle crow	<i>C.macrorhynchus</i>	-	-
62	Common woodshrike	<i>Tephrodornis pondicerianus</i>	-	*
63	Common iora	<i>Agethina liphia</i>	*	*
64	Leaf bird	<i>Chloropsis aurifrons</i>	*	-
65	Red-whiskered bulbul	<i>Pycnonotus jocosus</i>	*	-
66	Red-vented bulbul	<i>P.cafar</i>	*	-
67	White-browed bulbul	<i>P.luteolus</i>	-	-
68	Yellow-throated bulbul	<i>P.xantholaemus</i>	-	-
69	Yellow-eyed babbler	<i>Chrysomma sinense</i>	-	-
70	Jungle babbler	<i>Turdoides striatus</i>	*	*

No.	Common Name	Scientific Name	1	2	No.	Common Name	Scientific Name	1	2
71	Paradise flycatcher	<i>Terpsiphone paradisi</i>	*	~	86	Pied wagtail	<i>Motacilla maderaspatensis</i>	*	—
72	Tickell's blue flycatcher	<i>Muscicapa tickelliae</i>	—	—	87	Thick-billed flowerpecker	<i>Diaceum agile</i>	*	—
73	Grey headed flycatcher	<i>Culicicapa ceylonensis</i>	*	—	88	Tickell's flowerpecker	<i>D. erythrorhynchos</i>	*	—
74	Plain wren warbler	<i>Prinia subflava</i>	—	*	89	Purple sunbird	<i>Nectarinia asiatica</i>	*	*
75	Tailor bird	<i>Orthotomus sutorius</i>	—	*	90	Purple-rumped sunbird	<i>N. zeylonica</i>	*	—
76	Tytler's leaf warbler	<i>Phylloscopus tytleri</i>	—	—	91	White eye	<i>Zosterops palpebrosa</i>	—	—
77	Tickell's leaf warbler	<i>P. affinis</i>	*	—	92	Housa sparrow	<i>Passer domesticus</i>	—	—
78	Magpie robin	<i>Copsychus saularis</i>	—	*	93	Baya weaver	<i>Ploceus philippinus</i>	—	—
79	Pied bush chat	<i>Saxicola caprata</i>	—	—	94	Spotted munia	<i>Lonchura punctulata</i>	—	—
80	Indian robin	<i>Saxicoloides fulicata</i>	—	—	95	Black-headed munia	<i>L. malacca</i>	—	—
81	Malabar whistling thrush	<i>Myiophonus horsfieldii</i>	—	—					
82	Pied ground thrush	<i>Zoothera wardii</i>	—	—					
83	Brown rock pipit	<i>Anthus similis</i>	—	—					
84	Nilgiri pipit	<i>A. nilghiriensis</i>	—	—					
85	Yellow wagtail	<i>Motacilla flava</i>	*	—					



The Economic Status of the Spotted Munia With Reference to Two Agricultural Crops

H DANIEL WESLEY, 126, Ramalinga Nagar South, Tiruchirapalli 620 017

Granivorous birds occupy the central place as pests. In India the impact of birds on economy is "not paid due attention" (Bhatnagar, 1979) and "practically no intensive research has been done in India of the sort contemplated" (Ali, Salim: BNHS Document). Ploceidae comprising the sparrow, the weaver birds and the munias is one of the thirteen avian families that contain grain-eating members. Some investigations on bird damage to grains such as millet, rice, maize and sorghum and to standing crops have been done (Bhatnagar *et al.*, 1974; Bari *et al.*, 1968; Dhindsa and Toor, 1980; Francis Nathan and Rajendran, 1982; Gole, Prakash, 1982; Jotwani *et al.*, 1969; Jotwani and Raizada, 1974; Mir Amid Ali *et al.*, 1979; Sarwar and Murty, 1982). The present account is of my attempt in 1986 at knowing the economic status of the spotted munia (*Lonchura punctulata*), with reference to two varieties of a poor man's food in India, the pearl millet (*Pennisetum typhoides*) - a soft wild variety with husk and a hybrid km2 - and paddy (*Oryza sativa*).

Six birds of the munia were obtained from a local vendor and maintained in two sets of three each in separate cages of same dimension 45 x 30 x 30 cm. The investigations were made on both the sets of birds at the same time for a total of ten days divided into two periods of five days each. During the first five days one set was offered wild millet and the other, km2. For the second five days, the first set was offered paddy alone, and the second, paddy and millet. For all the experiments, the grain(s) offered each set was 30g. They were presented to the birds before dawn. The unused grains in the feed-dish were weighed and regarded as not lost. The whole and naked grains lying outside the dish and those in the water-dish, collected and dried, were weighed and accounted as wastage. The data on the rate of

Table 1: Bird⁻¹ day⁻¹ consumption of three food grains for spotted munia

Experiment No		I					II	
Bird set	No	1	2	1	2		1	2
Grain (g)		Wild millet	Km2	Paddy	Paddy	Wild millet		
Days	1	8.725	7.833	11.666	9.999	2.509		
	2	8.920	7.847	11.653	8.694	2.409		
	3	6.920	5.202	10.118	9.136	1.774		
	4	8.009	5.255	12.198	8.418	1.815		
	5	13.420	8.423	10.163	8.437	2.849		
Consumption mean		9.198 ± 2.48	6.912 ± 1.55	11.159 ± 0.956	8.936 ± 0.66	2.27 ± 0.464		
Bird ⁻¹ day ⁻¹		3.066	2.304	3.72	2.98 plus 0.75			
%		57.09	42.91	—	79.89	20.11		
%		45.18	—	54.82	—	—		

consumption of the three grains in the two experiments for five days each are presented in Table 1.

The maximum bird⁻¹ day⁻¹ consumption of any single grain was 3.72g of paddy with wild millet (3.066g) next in order followed by 2.304g of km2. The total consumption together of the two grains - paddy and wild millet - was 3.73g. It appears that the bird can consume a maximum of 3.73g or so of food seeds per day taking several seeds that are available in nature. The birds' preference to the experimental seeds was in order: paddy, wild millet, and km2.

A projection to the field at 731.8 ± 58.24 and 3201 ± 126.21 grains per earhead of wild millet and km2 respectively, and at 211 ± 9.11 and 112.24 ± 6.15 grains per one-gram weight of the grains respectively and at the bird

density of 200 or so per flock (Ali, Salim 1979), the loss of grains would amount to 176.80 and 16.15 ear heads day⁻¹. As for the loss of the paddy, the earheads with a mean of 113.02 ± 50.52 grains calculated for 260 heads and 53.29 ± 2.15 grains per gram of grain calculated for 70 one-gram weight, the damage would be 350.80 earheads. In the event of the munias forming flocks throughout the year reaching enormous proportions (Gooders, 1975) the loss of grains should be heavy indeed.

Evidently the munia is a pest of millet and paddy. This is followed as its close next by the White-backed Munia (Table 2). The bird is however a generalist with the food comprising seeds of grasses of several kinds (Gooders 1975; Janet Kear 1962; Morris 1955c; Newton 1972) and lantana fruits (Ali, Salim 1987). It might be that when a flock descends into a crop field some go to the base of the standing crop for foraging either on the ground or from the grasses below (Ali, Salim 1987; Francis Nathan and Rajendran 1982; Gole, Prakash 1982; Gooders 1975). The duration of the flock's stay in the crops and the activities of the individual birds should throw light on the quantum of damages caused. Gole, Prakash (1982) reports that the grain-eaters did not remain in the field for more than ten minutes. The birds are known to attack ripening or ripe grains (Wolters and Immelman 1968; Gole, Prakash 1982). They are a potential pest, not so much a harassing nuisance as the sparrows are, and have already "moved into fields and gardens some even into parks and great cities (Wolters and Immelman 1968).

Table 2 : Relative consumption of 5 agricultural crops by 5 species of munias

Bird species	Grain : Consumption (g) - bird ⁻¹ day ⁻¹				
	Paddy	Wild millet	Km ₂	Finger millet	Fox tail millet
<i>Lonchura striata</i>	2.81 ± 0.34	2.02 ± 0.33	2.55 ± 0.59	2.16 ± 1.12	2.49 ± 0.41
<i>L. punctulata</i>	3.12 ± 0.59	3.08 ± 1.39	1.88 ± 1.99	--	--
<i>L. malabarica</i>	--	1.86 ± 0.53	--	--	--
<i>L. malacca</i>	1.99 ± 1.67	--	--	--	--
<i>Estrilda amandava</i>	--	0.97 ± 0.47	0.49 ± 0.28	--	--

Source [Unpublished] : B.Sc Project reports, Bharathidasan University, Tiruchirapalli 620 024

Of eco-physiological interest is the calculation that at the average 13.6g body weight of the Munia (Ali, Salim and Ripley 1987) and the maximum grain consumption at 3.73g of paddy bird⁻¹ the percentage body weight consumption would be 27.42. At the close of the investigation the munias were quite active and healthy indicating that they could manage with a few grain-kinds during lean periods in the wild unlike the Red Munia (*Estrilda amandava*) the male of which died in eighteen days of the feeding on millet alone, the brilliant plumage fading to female plumage. The wasted

grains and those in the water-dish speak for the mode of dissemination of the seeds and the propagation of the grasses for the bird's own good. For after all, "the profit of the earth is for all: the king himself is served by the field".

A thorough field investigation as to the grass seeds taken, feeding behaviour, population size and fluctuation, breeding biology is required for the proper assessment of the bird's economic status.

References

- Ali, Salim, 1979. The Book of Indian Birds. 11ed Bombay Natural History Society, Bombay.
- Ali, Salim and S.D. Ripley, 1987. Compact Handbook of the Birds of India and Pakistan, 2nd ed Delhi, Oxford University Press.
- Beri, Y.P., M.G. Jotwani and B.G. Srivastava, 1971. Screening of Sorghum varieties against bird damage. Ent. News Letter, New Delhi, 1(5) : 38.
- Bhatnagar, R.K., 1976. Significance of bird management and control. Pesticide Annual, pp 74-83.
- Bhatnagar, R.K., M.G. Jotwani and M. Raizada, 1974. Screening of bajra varieties for relative damage due to birds. Ent. News Letter, New Delhi 4(10) : 55.
- Dhindsa, M.S. and H.S. Toor, 1980. Extent of bird damage to rice nurseries in the Punjab, India and its control. Indian J Agric Science, 50(9) : 715-719.
- Francis Nathan and B. Rajendran, 1982. Bird fauna of the rice crop eco-system in Pondicherry region. J Bombay Nat Hist Soc, 79(1) : 204-206.
- Gole, Prakash, 1982. Birds and standing crops. J Bombay Nat Hist Soc, 79(2) : 417-419.
- Gooders, John, 1975. The Great Book of Birds. The Dial Press, New York, pp 321-327.
- Janet Kear, 1962. Food selection in finches with special reference to interspecific differences. Proceedings of the Zoological Society, London, pp 163-203.
- Jotwani, M.G., Y.P. Beri and K.K. Verma, 1969. A note on the bird damage to millets. The Allahabad Farmer, 43(1) : 43-44.
- Jotwani, M.G. and M. Raizada, 1974. Screening of bajra varieties for relative damage to birds. Ent. Newsletter, New Delhi, 4(10) : 55.
- Mir Amid Ali, B.H. Krishnamurthy Rao, M. Ananda Rao, P. Syam Sundar Rao, 1982. Bird damage in maize. J Bombay Nat Hist Soc, 79(1) : 201-204.
- Morris, D., 1955c. The seed preferences of certain finches under controlled conditions. Avi Mag, 61 : 271-287.
- Newton, I., 1964. Bud-eating by bull finches in relation to natural food supply. J appl eco, 1 : 265-279.
- Sarwar, H.A. and K.N. Murty, 1982. Destruction of pearl millet nursery by sparrows, *Passer domesticus* (linnaeus) and its avoidance. J Bombay Nat Hist Soc, 79(1) : 200-201.
- Wolters, H.E. and K. Immelman, 1968. Weaver finches. In: Grazimek Animal Life Encyclopedia. I Birds III, pp 444.
- *Unpublished : BSc Project Reports (1985-'86). Bharatidasan University, Tiruchirapalli 620 024.



Workshop on the Field Identification of Shorebirds, Gulls and Terns

Sixty four species of birds of the order *Charadriiformes* belonging to 8 families found in Kerala could be termed as 'shorebirds' in the real sense. They include 44 species of waders, 2 species of swallow-plcvers or pratincoles, 5 species of gulls and 13 species of terns. Apart from 8 species breeding here, all others are migratory. With various plumage variations according to season, age, etc., these birds pose serious problems in identification even to the expert. Lack of good Indian field guides compound the problems leaving many birds unidentified or worse, misidentified.

As an effort to educate young birdwatchers in the field identification of this fascinating group of birds, THANAL in association with SEEK (Society of Environmental Education in Kerala) will be conducting a Workshop, details of which are given below.

Venue : P.W.D. Rest House, Madayi

By train, alight at Payangadi (Pazhayangadi), a station between Kannur and Payyanur. For participants from south, the Malabar Express (from Trivandrum to Mangalore) will be convenient as this train reaches Payangadi at 6.40 am. All trains except Kurla-Mangalore Express and the Westcoast Express (Madras-Mangalore) stop at Payangadi. By road, board the bus from Kannur to Payyannur (via *Pazayangadi*) at the Municipal bus stand, get down at Eripuram police station bus stop. The Rest House is just a few minutes walk from the bus stop and the railway station.

Date and time :

12 and 13 August 1995. The WS will begin at 9.30 am on 12th and will conclude at 4.30 pm on 13th.

Eligibility :

Young birdwatchers who regularly visit wetlands and want to know more on the field identification of shorebirds, gulls and terns.

Registration :

As a voluntary organisation without any source of income or funds, we are compelled to charge a nominal fee to cover the accommodation and food of the participants. The fee is Rs 40/- for students and Rs 100/- for other birdwatchers. Please confirm your participation as early as possible. Registration can be done at 9 am on 12 August before the beginning of the WS.

Programme :

The participants will be given intensive training in the field identification of shorebirds through slide-talks, classes as well as by identifying shorebirds in the field.

The field outings will mainly be to Madayi Para, a vast lateritic plain, at the edge of which the Rest House is

C. SASIKUMAR, 9, Subash Nagar, Kannur 670 002

situated. This is a unique place in Kerala; a number of waders belonging to different species over-winter here while most of their kin return to north back to their breeding grounds. Many of the early autumn migrants reach here first in north Kerala, with vestiges of their summer plumage.

Detailed programme will be available at the time of registration.

Clothing and Field Equipment :

Please bring your binoculars. Also bring bedsheet and umbrella. Dull coloured dress is preferred for field outings; an extra set might prove useful - a good rain during the field trip at the Para will drench you from head to toe :

Please Do Not Bring Your Friends along with You Without Informing Us In Advance. Come Prepared For Serious Study.

Looking forward to meeting you in the workshop.

Yours sincerely,

C. Shashikumar
JAFER PALOT

Write to us in the following address :

C Sashikumar
9, Subhash Nagar
Kannur 670 002

Chanal & Seek 12 & 13 August 1995, Madayi

PROGRAMME

12 August 1995

- 09.30 am Registration
- 10.00 Welcome Speech
Inaugural Address
Conservation of Wetlands - Talk
Shorebirds, Gulls and Terns - An Introduction
- 11.00 Tea break
- 11.15 Session I
- Identification of Plovers, Sandpipers
- 01.15 pm Lunch
- Session II
- Identification of Large Shorebirds, Pratincoles and Snipes
- 04.30 Tea break
- 05.00 Field Trip
- 08.00 Dinner
- 09.30 Discussion

13 August 1995

- 06.30 am Field Trip
- 10.00 Breakfast
- 11.00 Session III
- Identification of Gulls and Terns
- 01.15 Lunch
- 02.15 to 04.00 pm Discussion, Quiz on field identification



THANAL WORKSHOP ON THE IDENTIFICATION OF SHOREBIRDS - 12 & 13 August 1995, Madayl

Key differences between similar species :
Adult in Non-breeding plumage

1	Golden plover <i>Pluvialis fulva</i>	Grey plover <i>P. squatarola</i>
Back	Pale brown, some golden (yellow) spotting	Pale brown grey, spotted whitish
Axillaries	Grey	Black
2	Ringed plover <i>Charadrius hiaticula</i>	Little ringed plover <i>Charadrius dubius</i>
Wingbar	White, prominent	Absent
Eye-ring	Not present	Yellow
Size	Large (19 cm)	Smaller (16 cm)
3	Green sandpiper <i>Tringa ochropus</i>	Wood sandpiper <i>T. glareola</i>
Supercilium	Conspicuous	Less prominent
Breast	Strongly streaked	Washed grayish, slightly streaked
Upperparts	Blackish, squarely cut off from white upper tail-coverts and tail	Less contrast between brown upper parts and white upper tail-coverts
Underwing	Blackish, contrasting strongly with white belly	Pale underwing
Tail	White, with 2-3 broad black bands	White with thin dark brown barrings
Legs	Blackish green. Do not project much beyond tail-tip	Greenish yellow, longer. Project well beyond tail-tip
4	Dunlin <i>Calidris alpina</i>	Curlew sandpiper <i>C. ferruginea</i>
Upper	Stint-tail pattern (broad black line down centre of rump, upper tail-coverts and tail)	White
5	Little stint <i>Calidris minuta</i>	Temminck's stint <i>C. temminckii</i>
Leg colour	Blackish	Yellowish or greenish
6	Bartailed godwit <i>Limosa lapponica</i>	Blacktailed godwit <i>Limosa limosa</i>
Upper parts	Streaked pale grey-down and pale buff-brown	Uniform grey
Wingbar	No obvious wingbar	White, conspicuous
Underwing	Greyish (only underwing-coverts, axillaries white, the latter narrowly barred brown)	White
Tail	Thinly barred black	White with broad black terminal bend
Legs	Short, toes project beyond tail-tip	Long. Project well beyond tail-tip
Bill	Upcurved with basal half yellowish, distal half blackish. Shorter than Blacktailed's	More or less straight with basal half orange or reddish
7	Common redshank <i>Tringa totanus</i>	Spotted redshank <i>T. erythropus</i>
Wing	Entirely white secondaries and tips of inner primaries forming a conspicuous	Dark wings, only a slightly paler trailing panel white trailing edge on dark wings

Supercilium	Indistinct	White, extends beyond eye
Legs	Orange-red, long	Dark red, longer
Bill	Tipped black, base red	Black, red at base. Longer.
8	Common greenshank <i>Tringa nebularia</i>	Marsh sandpiper <i>T. stagnatilis</i>
Size	Larger (35 cm)	Smaller (25 cm), slender build
Bill	Thick, upturned, partly greenish-grey bill	Slender, straight, black bill
Legs	Long, gray to pale olive	Thin, long, greyish-green
Call	"teu-teu-teu"	"pi-pi-pi" or "plew"
9	Lesser sandplover	Greater sandplover
At all times		
Bill	Noticeably more delicate, never with prominent gonys, length roughly equal to distance from base of bill to rear of eye	Heavier, many eastern birds with pronounced gonys; length greater than distance from base of bill to rear of eye
Head shape	Nearly always rounded	Variable, sometimes rounded, often more angular with sloping forehead
Leg length	Long, but shorter than Greater, especially above the 'knee'; toes fall roughly level with tail-tip in flight	Very leggy; toes project beyond tip of tail in flight
Leg colour	Generally darkish grey	Variable, generally much paler; grey with greenish or even yellow tinge
White wingbar	Inner bar relatively prominent; primary bar usually with parallel edges	Inner bar slightly less prominent; primary bar bulges on primaries 2-5
Tail pattern	Little white at sides or tips; tends to appear evenly dark	Tends to show more white, especially on lateral uppertail-coverts; strongly contrasting dark sub-terminal bar
Call	Sharp, hard 'chitik'	Quiet, long, rolling or trilling 'tritictrick', or shorter 'trri'

10. TERNS - all black capped in breeding plumage, losing it to some degree in winter

	bill
v. large CASPIAN	bright RED, heavy tail comparatively short and square
LARGE CRESTED	pale GREENISH-YELLOW tail moderately forked forehead white; darker upper parts than lesser crested
Large GULLBILLED	BLACK, short, stout tail slightly forked, more so than whiskered

INDIAN RIVER	ORANGE-YELLOW
	tail very deeply forked
	Legs & feet orange-red
LESSER CRESTED	ORANGE
	tail moderately forked
	black forehead
SANDWICH	BLACK (yellow tip) slender
	tail moderately forked
medium COMMON	DARK RED (black tip); black in winter
	tail fairly deeply forked

	legs and feet red; blackish outer webs of outer tail feathers
BLACKBELLIED	YELLOW; duller, dusky tip in winter
	tail very deeply forked, with streamers
	legs and feet orange-red; prefers fresh water
small WHISKERED	DARK RED; blackish in winter
	tail very shallow fork, almost squarish
	legs and feet dark red; fluttering and dipping flight;
	always has white undertail coverts



A Note on Some Raptor Trapping Techniques used by Local Tribes in Uttar Pradesh

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The trapping/capturing of various species of wild birds have a long history in India and many traditional methods have been employed for different species. Traps differ, aside from size and shape, mainly in the type of entrance and mechanism. For example baited box are used especially for gregarious seed-eaters. Baited net traps are used for those birds who do not enter an enclosure readily. Drive and drift traps are used for waterfowls, quails and grouses (Giles, 1984). The mist netting is particularly used for those species which will not come to bait. It is also useful for ringing and in studies on species abundance. Nest traps are used for ground nesting birds such as most waterfowl.

The information on capturing raptorial birds is inadequate in our country. Raptors are caught by tribes to keep them as a pet and also for use in street shows. There are also ancient records of raptors being used as messengers. This note describes the three methods used for capturing birds of prey. These methods, employed by local tribes named "Kanjars" in Uttar Pradesh districts of Agra, Bareilly and Jhansi, could be useful in raptor studies that require trapping.

1. Bal Chatri

The bal chatri is a weldmesh cage (1" x 2.5" width mesh size) with nylon-thread nooses tied to the top and a live bait inside the cage (Fig.1). The size and shape of bal chatri

depends on the size of raptor to be caught and the bait to be used. In general tribes use live animal bait to attract animal. The most conventionally used bait in traps include :

1. Live bait (bandicoots or chicken entrails)
2. Dead bait (meat)

The types commonly used is a one foot high cage over a rectangular plate of hardware cloth. The entire structure of hardware cloth and nylon thread nooses were tied all over on the top. Approximate 15 to 20 number nooses were made. House rats were the baits used. The traps were painted black for camouflaging. The bal chatri is designed to trap perching raptors. The birds tarsus get caught in the nooses as it take off on bal chatri.

2. Stick and gum method

This simple and indigenous method of trapping raptors is widely used by Bihar trappers. The latex from *Ficus bengalensis* type is extracted and is heated with mustard oil for fifteen to twenty minutes till it develops a regular

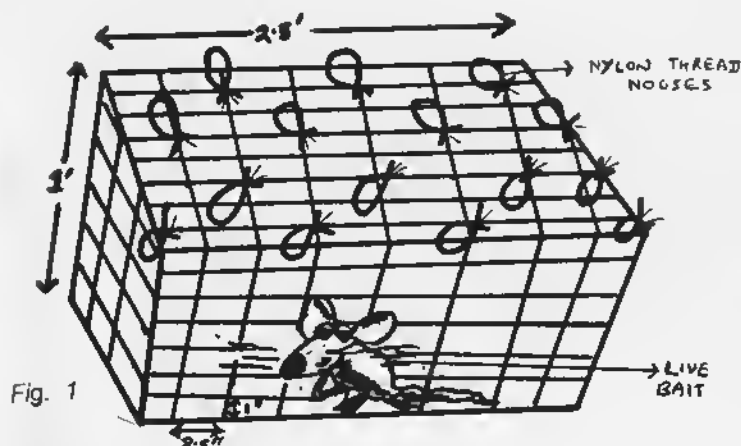


Fig. 1



Fig. 2

consistency. The gum is then applied on two strong sticks held in "X" position, about 0.6 meter apart (Fig.2). A live bait bandicoot is tied with string placed in between these sticks. The sticks are then loosely fixed on the ground, near the vicinity of the perching raptor. When the raptor comes to grasp the prey, the sticks fall and the glue sticks to its feathers. This makes the raptor off balance and immobile. It is then caught immediately.

3. Bow net

Bow net consists of two semicircular bows of iron with grill netting strung loosely between it. Hinges and springs connect the two semicircles together at their base. The

lower half is fixed to the ground. When resting the traps one half of the bow is pulled over the lower stationary half and latched. A house rat is placed in the centre to lure the raptor. A person sits with line attached to the trigger at a distance in a blind. As soon as the raptor strikes at the prey the trap is set off by the person pulling the triggering line. An indigenous clap trap or bow net made up entirely of wooden rods and nylon net, used by Bihari trappers.

Literature cited

Giles, H.R., 1984. *Wildlife Management Techniques*. The Wildlife Society, Washington, D.C. Nataraj Publisher, Dehradun, 549 pp.



MANU PRASANNA, VIVEK NITHYANANDA, K.M. BELLIPPA, S. SIDDHARTH and NIHIT MOR,
The Valley School, 17th Km, Kanakapura Road, Bangalore 560 062

Birding in Kullu-Manali

This year we had been for a trip to the Kullu-Manali region of the Western Himalayas. Reaching Manali on the 20th May, we made enquiries and later on that day left for Jagatsukh, a small village about 6 km away.

We pitched our tents amongst the pines just outside the village. Next morning we were awakened by a chorus of hill barbets *Megalaima virens* from higher up in the valley. We spent the day at the campsite to get acclimatized to the weather. Right through the trek the weather was cool and pleasant with showers of rain every evening. During the course of the day we spotted yellow billed blue magpies *Cissa flavirostris* in the apple orchards down below and hunting parties of greenbacked tits *Parus monticolus*, crested black tits *Parus melanolophus*, redheaded tits *Aegithalos concinns*, brown flycatchers *Muscicapa latirostris* amongst the pines. On the way to the river black bulbuls *Hypsipetes madagascarensis*, yellowbilled choughs *Pyrrhocorax graculus*, rock bunting *Emberiza cia*, tree sparrow *Passer montanus*, whitecheeked bulbuls *Pycnonotus leucogenys*, longtailed minivet *Pericrocotus ethologus*, verditer flycatcher *Muscicapa thalassina*, jungle crows *Corvus macrorhynchos*, common myna *Acridotheres tristis* and house sparrows *Passer domesticus* were seen. Brown dippers *Cinclus pallasii*, river chats *Chaimarrornis leucocephalus* and plumbeous redstarts *Rhyacornis fuliginosus* were a common feature by the hill torrents throughout the trek.

The following day we set out early in the morning, to reach a point halfway to a place called Chikka. The area we traversed beyond Jagatsukh was relatively undisturbed but for a few nomadic shepherds and the occasional trekker. As the day went by we went through numerous zones of conifers and broad-leaved evergreen forest crisscrossed by a prolific number of streams. On the way we encountered black bulbuls, grey drongos, verditer flycatchers, variegated laughing thrushes *Garrulax variegatus* and a pair of little forktails *Enicurus scouleri* by the river. In the evening we

pitched camp at a place bounded on one side by steep cliffs and on the other side by a stream bordering evergreen forests. Later in the evening we watched a group of yellownaped yuhinas *Yuhina flavicollis* hopping amongst the spruce and breaking off small branches for nest building.

We spent the next morning waiting in hope that the soaring Himalayan griffons *Gyps himalayensis* and Lammergeiers *Gypaetus barbatus* would sight a carcass which was lying nearby. Surprisingly, even though it was out in the open, the vultures could not spot it during the course of the next four days. The same day we crossed the river in the afternoon to explore the evergreen forests. The vegetation was dense. It was dark under the thick canopy of oaks and other evergreen trees. The undergrowth of ferns was however not so dense. Himalayan pied woodpeckers *Picoides himalayensis* tapped holes while investigating the trunks of towering evergreens. Longtailed minivets and greyheaded flycatchers *Culicicapa ceylonensis* flitted in the upper foliage. As we made our way back, we flushed out a large brown thrush *Zoothera monticola* rummaging through the leaves on the dark forest floor near the river. Later on, while crossing the river we discovered the nest of a river chat, well hidden amongst the strewn boulders. We reached the shelter of our tents just as the habitual evening rain set in.

However, on waking up the next day, we saw that the clouds had cleared. On the way to Chikka we spotted variegated laughing thrushes, chukor *Alectroris chukar*, rufousbellied niltava *Muscicapa sundara*, rufous turtle dove *Streptopelia orientalis*, bearded vultures, himalayan griffons and river chats. The route to Chikka also saw the thinning down of the vegetation, effects of a few landslides and the approach of the proximate snow-line. There was also a change in the birdlife.

Chikka is almost on the summer snow-line. It is situated in a rocky valley surrounded by snowcapped peaks and patches of coniferous and birch forests with a few scattered rhododendron bushes. On reaching the campsite in the evening, we saw blue fronted redstarts *Phoenicurus frontalis*, snow pigeons *Columba leuconota* and grey wagtails *Motacilla cinerea* by the side of the river. In the birch forest yellowbellied fantail flycatchers *Rhipidura hypoxantha* and barthroated sivas *Minla strigula* were seen commonly. We were observing the hole nest of a crested black tit 10 ft high on a birch, when our activities were brought to an abrupt stop by heavy snowfall.

The next day the weather conditions prevailed, canceling our plans about trekking higher. We stayed in our tents for most of the day but when the weather cleared for a short period in the afternoon we returned to the birch forest. In the birch forest we observed an orangegorgeted flycatcher *Muscicapa strophilata* making sallies to catch flies. White cheeked nuthatches *Sitta leucopis* came descending down the trunk of a birch and treecreepers *Certhia familiaris* moved up the same in search of food. Orange-flanked bush robins *Erithacus cyanurus* and red-crowned jays *Garrulus glandarius* were also seen here.

We began our return journey on the 27th. We stayed at the campsite halfway down to Jagatsukh again for a day. While descending to the camp, the going was easy and we were relaxed. As a result we were more alert and managed to spot Himalayan Palm Civets *Paguma larvata*, a Red Flying Squirrel *Petaurista petaurista albiventer*, a Himalayan Weasel *Mustela sibirica* and a Himalayan Pit Viper *Ancistrodon himalayanus*. A golden eagle *Aquila chrysaetos* was seen soaring high above the cliffs. A Black Bear was taking heavy toll on the cattle that came to graze in this region. This was evident from presence of scattered skeletons all around.

We returned to Jagatsuk on the 2th and finally bid goodbye to the mountains on the 1st of June 1995.

References

- Ali, Salim and Ripley, S.D. (1983). Compact Handbook to the birds of India and Pakistan.
 Ali, Salim (1977). A Field guide to the Birds of the Eastern Himalayas.



Bird Observations from Chakrashila Wildlife Sanctuary and Adjacent Areas

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Spread over an area of 2626 km², the Dhubri district forms the westernmost part of Assam. The river Brahmaputra flows through the district, dividing it into two bits. The vast strength of land along the river bank is dotted with wetlands which forms a part of the floodplain. Dhubri lat 25° 28' N to 26° 22' N and long 89° 42' E to 90° 12' E) has a varied topography which comprises the rivers, wetlands, hillocks and forests. The area is also rich in birdlife and has one of the best bird-habitats in Lower Assam.

Towards the northern boundary of the district is a small range of hillocks known as the Chakrashila hills. These hills, once covered with forests, have been heavily logged and only a few pockets survive. The Chakrashila Wildlife Sanctuary is one of them. The Sal *Shorea robusta* is the dominant tree species here but mixed forests of *Albizia procera*, *Amblica officinales*, *Lannea grandis*, *Toona ciliata*, etc. also occur. Ravines of *Dendrocalamus bamboo* are found in the area. Most of the forest in the area is re-generating and is completely managed by the local people. Apart from a rich birdlife, Chakrashila protects many animals including a sizeable population of the rare Golden Langur (*Presbytis geei*).

Dakra beel is one of the wetlands which are found along the foothills of the Chakrashila hills. It is shallow and is gradually getting silted up. Plants such as *Andropogon* spp., *Enhydra fluctans*, *Pistia stratiotes* and *Eichornia crassipes* are found along the margin of the wetland. The wetland is

threatened by a number of disturbing factors such as fishing, livestock overgrazing, etc.

Very little information exists on the birds of lower Assam. Although Dhubri is no exception, it has been studied to a certain extent. Dutta (1995) has compiled a fairly comprehensive checklist of the birds of the area. In this article I record the observations made on birds in Chakrashila Wildlife Sanctuary (CWLS) and adjacent areas during a visit in February 1995.

Northern sparrowhawk (*Accipiter nisus*)

One bird was seen on a Sal tree near the 'Jhornagra' area of CWLS.

Greater spotted eagle (*Aquila clanga*)

Two birds were seen in Dakra beel.

Red-headed vulture (*Sarcogyps calvus*)

One bird was seen on a tree near the 'Jhoranagra' area of CWLS.

Jungle bush-quail (*Perdica asiatica*)

Two birds were seen in an opening amidst scrubland in CWLS.

Woollynecked stork (*Ciconia episcopus*)

One bird was seen in a paddy field near Chapar town.

Lesser adjutant stork (*Leptoptilos javanicus*)

One bird was seen in Dakra beel.

Yellowfooted green pigeon (*Treron pheonicoptera*)

Grey drongo (*Dicrurus leucocephalus*)

Two birds were seen in Sal forest in CWLS.

Note : * = the first record for Dhubri

Bronzed drongo (*Dicrurus aeneus*)

A few birds were seen in a Sal forest in CWLS.

Greater racket-tailed drongo (*Dicrurus paradiseus*)

Seen on two occasions in CWLS. Once in a Sal forest and once among bamboo clumps.

Longtailed minivet (*Pericrocotus ethologus*)

Five birds were seen in a Sal forest of CWLS.

Greybacked shrike (*Lanius tephronotus*)

One bird was seen near the 'Jhornagra' area of CWLS.

Inornate warbler (*Phylloscopus inornatus*)

About 5 birds were seen among bamboo in CWLS.

Plain prinia (*Prinia subflava*)

Two birds were seen among some grass near a stream in CWLS.

Striated grassbird (*Megalurus palustris*)

One bird was seen on an electric wire over a reedbed from the National Highway. The area where it was seen is adjacent to Dheer Beel.

Goldenspectacled warbler (*Seicercus burkii*)

5-6 birds were seen in a bamboo clump in CWLS.

Blacknaped monarch (*Hypothymis azurea*)

Four birds were seen among bamboo in CWLS.

Some other birds sighted are listed below.

Intermediate egret	<i>Nesophox intermedia</i>
Great egret	<i>Casmerodius albus</i>
Cattle egret	<i>Bubulcus ibis</i>
Indian pond heron	<i>Ardeola grayii</i>
Brahminy kite	<i>Haliastur indus</i>
Little grebe	<i>Podiceps ruficollis</i>
Little cormorant	<i>Phalacrocorax niger</i>
Indian cormorant	<i>Phalacrocorax fuscicollis</i>
Cotton pygmy goose	<i>Nettapus coromandelianus</i>
Common moorhen	<i>Gallinula chloropus</i>
Bronzwinged jacana	<i>Metopidius indicus</i>
Rd jungleowl	<i>Gallus gallus</i>
Blackhooded oriole	<i>Oriolus xanthorus</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
Spotted dove	<i>Streptopelia chinensis</i>
Oriental turtle-dove	<i>Streptopelia orientalis</i>
Rufous treepie	<i>Dendrocitta vagabunda</i>
Largebilled crow	<i>Corvus macrorhynchos</i>
Lineated barbet	<i>Megalaima lineata</i>
Blackrumped flameback	<i>Dinopium benghalense</i>
Indian roller	<i>Coracias bengalensis</i>
Haircrested drongo	<i>Dicrurus hottentottus</i>
Indian myna	<i>Acridotheres tristis</i>
Asian pied starling	<i>Sturnus contra</i>
Redvented bulbul	<i>Pycnonotus cafer</i>
Barn swallow	<i>Hirundo rustica</i>
Redbreasted parakeet	<i>Psittacula alexandri</i>
Common hawk-cuckoo	<i>Cuculus varius</i>
Longtailed shrike	<i>Lanius scach</i>
Jungle babbler	<i>Turdoides striatus</i>
Greyheaded canary-flycatcher	<i>Culicapa ceylonensis</i>

Little pied flycatcher

Ficedula westermanni

Whiterumped shama

Copsychus malabaricus

Whitecapped water-redstart

Chaimarrornis leucocephalus

Yellow wagtail

Motacilla flava

Scalybreasted munia

Lonchura punctulata

Eurasian tree sparrow

Passer montanus

Mixed-species flocks encountered during field trip

	Species	Number	Habitat
Flock 1	Greater racket-tailed drongo	1	Bamboo clumps
	Whiterumped shama	1	
	Blacknaped monarch	4	
	Goldenspectacled warbler	5-6	
	Inornate warbler	5	
Flock 2	Longtailed minivet	5 ±	Sal forest
	Greater racket-tailed drongo	3	
Flock 3	Greyheaded canary-flycatcher	5 +	Sal forest
	Little pied flycatcher	2	
	Grey drongo	2	

As a result fifty-four species were seen during the field trip, out of which sixteen were recorded in Dhubri for the first time. The sighting of the jungle bush-quail (*Perdica asiatica*) (for which the only record in Assam is Manas National Park) and the greater spotted eagle (*Aquila clanga*) is noteworthy. The occurrence of conspicuous species such as the woollynecked stork (*Ciconia episcopus*) for the first time in Dhubri proves that one of Assam's best covered areas is yet to be surveyed for its avifauna.

References

- Ali, S. and Ripley, S.D. (1983). Handbook of the birds of India and Pakistan. Oxford University Press, New Delhi.
- Dutta, S. (1995). Birds of Dhubri district, A checklist with Triplis. Nature's Beckon, Dhubri.
- King, B.F., Dickinson, E.C. and Woodcock, M.W. (1975). A Field Guide to the Birds of South-East Asia. Collin's London
- Raj, M., Saikia, P. and Bhattacharjee, P.C. (1992) (Conservation Status of Aquatic Birds in unprotected Areas of Goalpara district, Assam, India). pp 179-189 in K.P. Singh and J.S. Singh, Tropical Ecosystems : Ecology and Management.
- Sonobe, K. and Usui, S. (1993). A Field Guide to the Waterbirds of Asia. Wild Birds Society of Japan, Tokyo.



Observations on the Calling Behaviour of the Blue-eared Barbet

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Observations on the calls and calling behaviour of the blue-eared barbet (*Megalaima australis*) were made in two different 'Reserve Forest' areas of the West Kamrup Forest Division of Assam.

Ali and Ripley (1983) describe the call of this barbet as a "harsh metallic double note" which according to them sounds like a repeated "koo-turr" or "too-rook". I had opportunities on two occasions to observe calling birds and would describe the call as a quick, repetitive, thin "tik-rik" or "pik-rik". King *et al* (1980) describe it aptly as a "disyllabic tk-trrt, repeated about 120 times per minute".

The first of my two sightings (each being of a single bird) was in the Kulsi RF area. This particular individual was largely obscured by vegetation. On the second occasion (in the reserve forest area surrounding the Chandubi Beel) I was able to observe the bird quite clearly as it was sitting on one of the middle branches of a not-so-tall tree. The bird was partially fanning its tail and wagging it rapidly (approximately twice per second) from side to side. The 'tail wagging' motion would periodically be interrupted by a 'sideways hopping' motion, which basically consisted of a few stiff, lateral hops along the branch on which it was perched. This was usually followed by the bird returning to its 'starting point' in the same manner.

Yet another interesting facet of the 'calling behaviour' of this bird was that, unlike the coppersmith (*Megalaima haemacephala*) which seems to swivel its head from side to side while calling, the *australis* individual was seen to move its entire body, with the aid of a jump, to face in the direction in which it 'aimed' its call.

The current article being largely based on one observation of a single bird, the above mentioned behavioural observations can obviously not be generalized for the entire species. Therefore, it would be of great interest to hear from birdwatchers/ornithologists who have data on the vocalizing behaviour of this barbet.

Acknowledgements

I'm grateful to the Assam Forest Department for being of such great help in so many ways, during our survey-work in the state. I would like to dedicate this article to Dr H S A Yahya, a true connoisseur of 'barbet vocalizations'.

References

- Ali, S. and Ripley, S.D. (1983). Handbook of birds of India and Pakistan (Compact edition), Oxford University Press, Delhi.
- King, B., Woodcock, M. and Dickinson, E.C. (1980). A field guide to the birds of South-East Asia, Collins, London.

Correspondence

MALLARDS IN GENEVA. AAMIR ALI

The mallards on our little lake at Champex have undergone an interesting evolution: for years there were none. Then about 7-8 years ago, there were a couple; then several couples until a peak of about 50-60 individuals. This was evidently too many; now we have about 8-12; perhaps only two couples nested this year.

RISE AND FALL OF BIRD POPULATIONS. KUMAR GHORPADE

Zatar Futehally asked me to "add a paragraph about the rise and fall of bird populations" to follow Mr Aamir Ali's letter, and I can do no better than to quote relevant passages from R K Murton's excellent book on *Man and Birds* in the New Naturalist Series published by Collins, London (1971: 26, 36, 45-46) that may be interesting to readers:

Murton quotes David Lack who "has argued, and I again agree with his views, that the food supply is usually, but not invariably, the most important factor affecting these annual fluctuations in birds. While food could ultimately be the most important factor in all cases, other agencies, for instance predators, may hold numbers below the level which would be imposed by food shortage. The most important fact to appreciate from the view point of economic ornithology is that causes of death are effective until the population is in balance

with the environment, and in the absence of one such factor another will take its place. Conversely mortality factors are not usually additive—in the sense that two together do not decrease numbers more than one alone. The degree of stability seen in a population will, therefore, depend primarily on that of the environment and not on any essential characteristic of the population. By environment we not only mean the food supply but include all the other components, biotic and physical, which may interact to cause competition and mortality, directly or indirectly.

"Furthermore, it will be appreciated that several factors influencing bird numbers may act simultaneously, so that adjustments are continuous—this is why animal populations are called dynamic.

"Man has done so much in a passive way to alter the avifauna of Europe that it seems reasonable to take active steps to reintroduce lost species. Any reservations that this would be unnatural, should be tempered by the thought that the environment we have created is in any case artificial. Probably more pleasure than harm has been derived from the reintroduction of the capercaillie. It would seem laudable to follow up a recent suggestion and attempt the reintroduction of the bustard to parts of the East Anglian Breckland, and to encourage black terns to stay and breed. It is quite a different matter to introduce alien species to a new country, especially without sound biological knowledge. In Britain, some of these introductions, red-legged partridge, various pheasants, little owl, Canada and Egyptian goose and Mandarin duck have on

balance improved our bird-life, but the same could not be said of the introduction of the house-sparrow and starling to Australia and North America."

I have taken more than the "paragraph" that the Editor requested but would like to use this opportunity to recommend and also to caution our birdwatchers on two important matters concerning our birds. First, our knowledge of populations of native and migrant bird species in our subcontinent is miserable, to say the least. Birdwatchers must keep reasonably accurate logs of the numbers of every species of bird occurring in their surroundings. The present Mid-Winter Wildtowl Counts are a healthy beginning analysis. The suggestion by Murton to reintroduce native bird species (this is the "Restoration Ecology" of current times) but not "alien" ones is pertinent. Thus, the recent "moves" to recommend introduction of the barn owl into the Andaman & Nicobar Isles I view with great concern, since Hume's subspecies *Tyto alba deroeperstorffii* is (or was?) an example of an unsuccessful immigrant from the Indian mainland, naturally (?), many many years ago.



NEST OF SPECKLED PICULET. B. RAJASEKHAR, Type 5/6 'A' CLRI Quarters, Adayar, Madras 600 020

In February last, on one of my birding trails as a part of my study in Mudumalai Sanctuary, I happened to come across an active nest of the speckled piculet (*Picumnus innominatus*) in the moist deciduous tracts of the sanctuary. Correspondence with other bird-watchers around here seems to confirm that it is a very rare bird seldom seen or recorded by anyone leave alone its breeding activity. The nest was a 2 inch diameter cavity, 10 metres up, towards the end of the branch on a dead *Persea macarantha* tree. The tree had probably died due to debarking as is usually the case with many of its kind.

When the nest was discovered on 10th of February 1995, both parents were busy feeding the young (no idea of number), on an average of 5 minute intervals (n = 22). The nest was visited later once again and pictures were taken. Though the nest was only 10 m away from a path frequented by local villagers, the birds did not seem perturbed. In fact there were a pair of blossom headed parakeets and a pair of lesser golden backed woodpeckers nesting on adjacent branches of the same tree. In one instance, the piculet (sexes were indistinguishable) bravely mobbed the much larger woodpecker, which happened to land close to the piculets nest!



BREEDING OF PAINTED SNIPE *ROSTRATULA BENGALENSIS* AT RAJKOT. DR V.C. SONI, Department of Biosciences, Saurashtra University, and V.K. PANDYA, Baisaheba Girls' School, Rajkot 360 005

Rajkot is a fast developing city and a vast area is covered by human settlements on the outskirts of The Rajkot Municipal Corporation limit. Such areas lack basic facilities like an underground drainage system. Drainage water accumulates in low lying areas forming seasonal or perennial puddles around residential areas. Some puddles are visited by resident as well as migratory birds.

Such puddle (5000 sq m area) exists between Jalaram - 2 society and Africa Colony near the University Road. The puddle

has three small islands covered with tiny *Zizyphus* bushes and grasses.

During our visit on 25.02.1995 we observed four males and four females of painted snipe. During our subsequent visit on 27.02.1995 we saw three chicks following a male in the grass on the island. This is a first record of the breeding of painted snipe at Rajkot. We would like to obtain any further details.

Correspondence : V K Pandya, Vedmata, Saurashtra Kala Kendra Street, Opp. Nirmala Convent, Rajkot (Gujarat) 360 005



HEARTSPOTTED WOODPECKER IN THE KANHA NATIONAL PARK. RAVISHANKAR KANOJE, Forest Ranger, At & Post Mukki, Via Baihar 481 111, Dist Balaghat (MP)

The heartspotted woodpecker (*Hemicircus canente*) is usually seen near Mukki forest village in Kanha National park. While birding with the help of 'The Book of Indian Birds' by Salim Ali and 7 x 50 binocular, I was thrilled to identify a pair of this bird jerkily creeping on the trunk of the Palas tree (*Butea monosperma*) on 28th November 1993. I claim that this is the first record of the heartspotted woodpecker in the Kanha National Park as it has not been recorded so far.

[I presume that the clear heart shaped feather designs on the back of the male bird make it possible to identify this bird with confidence. Also this species is overall black and white. There are no reds and yellows to confuse you, unlike so many others of our 29 species - Editor]



RECENT RECORDS OF THE KENTISH PLOVER AND THE FOREST WAGTAIL IN ASSAM. DR ANWARUDDIN CHOUDHURY, Chief Executive, The Rhino Foundation for Nature in North-East India, [Address for Correspondence: Near Gate No.1 of Nehru Stadium, Islampur Road, Guwahati 781 007]

The Kentish plover *Charadrius alexandrinus* was recorded as a rare winter visitor to Assam (Handbook). There was only one record from the state and it was from North Cachar. Hence, any sighting of the species in North-east India is important. I here report of three sightings of the Kentish plover in Lakhimpur district, all in the year 1990.

On 4th January, I saw six birds on the shingle sandy banks of the Ranga river in Pabha reserved forest (formerly also known as Milroy Buffalo Sanctuary). One little ringed plover *Charadrius dubius* was also there nearby. Lack of black pectoral band and different colour pattern on head in *C.alexandrinus* made it conspicuously distinguishable from *C.dubius* when observed with a 10 x 50 telescope. The Kentish plover has distinctive black patch (somewhat discontinuous pectoral band; Fig.1) on its shoulder.

The second sighting was on 3rd February, when two birds were observed in Mohghuli *chapori* near Dhakuakhana town. The birds were near a dead channel of the Charikaria river. The last sighting was on 28th October. A lone Kentish plover was seen on the banks of the Methun *nullah*, a tributary of the Boginadi river inside Dulung reserved forest. These records are first for the entire Brahmaputra valley. Although overlooked

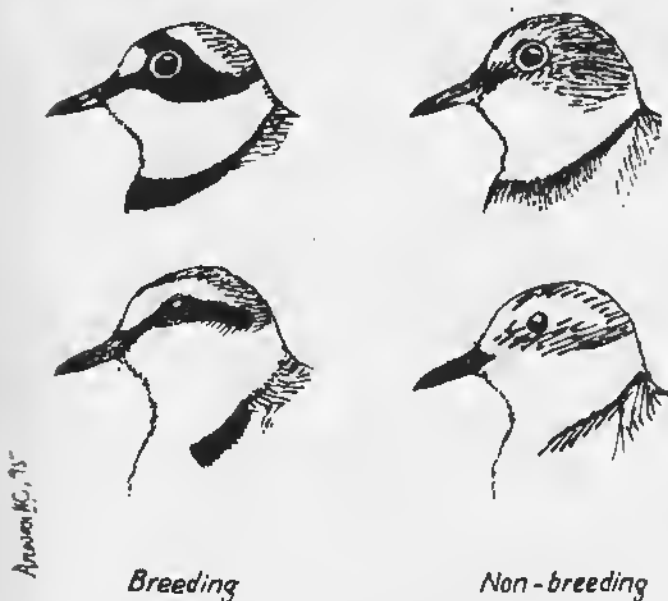


Fig. 1. Little ringed plover (above) and Kentish plover (below).

Note : Many birds retain breeding plumage in winter also.

Non-breeding male Kentish plover resembles female.

(Illustration : Author)

many a times, the Kentish plover is not common in Assam and other parts of north-east India.

The forest wagtail *Motacilla indica* is a rare bird all over India. The only known area where the bird is resident is the Barail range of Central Assam. The forest wagtail has been recorded as a rare winter visitor to India affecting only the hills, and in the hills of Meghalaya and North Cachar (Barail range), it reportedly occurred above 1000 meter elevation (Handbook). Like the preceding species, any sighting of the bird is important because very little is known of its extent of occurrence in Assam in winter as well as its movement. I here report of two new and interesting sightings and one in the known breeding area.

On 23rd September, 1988, while on a primate-survey to the Barail Range in North Cachar hills district, I spotted a bird on the forest road between Retzol and Doiheng. The elevation of the site was 1000+ meter. The bird then vanished among the undergrowth. On 31st August, 1991, I saw a wagtail in Lumding reserved forest of Nagaon district in central Assam. Interestingly, the elevation of the site was only 200 meter above sea

level. Then after a gap of 6 km, inside the same reserved forest, one more bird seen. This time the elevation was less than 150 meter. Both the birds were on the main road. The sightings in Lumding reserved forest is not only a new locality record but also suggests that the Forest wagtail occurs at much lower elevation as well.

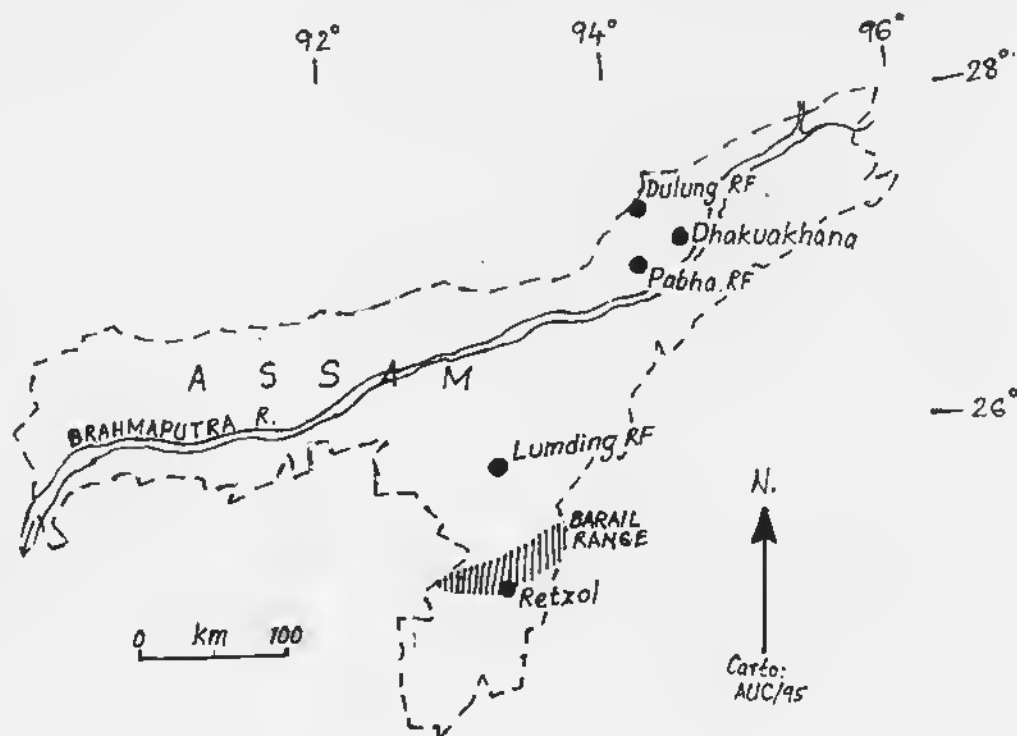
[Post script: One Kentish plover was observed by me in Bauwwa beel of Hailakandi district in the Barak valley of Southern Assam (4th March 1987)].



NEW AND RARE SIGHTING OF BLACK STORK NEAR DEHRA DUN (UP). SATPAL SINGH GANDHI, 87-D, Park Road, Dehra Dun 248 001

On 18th Jan 1995, we were on our regular bird watching trip to Chilla, Rajaji National Park about 60 km from Dehra Dun, after seeing migratory birds at the reservoir of Bhimgoda near Haridwar. Early in the morning we went to Rajaji National park and Chilla Range to shoot the elephants (photographically). We were three persons in our car and before entering the gate of Rajaji National park, a wildlife guard accompanied us who was also a bird watcher. After driving for about half an hour in search of elephants in Mandal block we reached a small lake by the side of the road. We parked our vehicle to see if we could sight some birds. We moved towards the water body and were astonished to see some storks sitting on a leafless tree about 10-12 meter in height. After seeing through binoculars (10 x 50) we were shattered to see that it was none other than black stork, one of the two migratory species of storks found in Indian subcontinent, the other being white stork.

Though the waterbody was a lonely place and we were moving quietly but the storks possibly observed us and took to their wings. They were four in number. I had clicked one of them by my Pantax with 500 mm lens and kept on watching them in



flight. In a few minutes they were soaring in the air along with the vultures. I got a couple of snaps in flight also.

After coming back I referred the book 'Wildlife in Dehra Dun and adjacent hills' by B.B. Osmaston and J.B. Sale, well known ornithologists, but it was amazing to go through the checklist of Dehra Dun and Adjacent hills because the list did not have the black stork listed.

Thereafter I consulted some more birdwatchers around and no one among them had ever seen black stork in and around Dehra Dun.

It was a rare and new sighting to be added to the checklist of Dehra Dun. [For proof I've got slides of flying and sitting posture of the black stork].



BIRDING IN ARABIAN DESERT. DR H.S.A. YAHYA, C/o NCWCD, P.O.Box No.61681, Riyadh 11575, Kingdom of Saudi Arabia

This refers to Mr Lavkumar Khachar's comment (NB Vol.35(3) : 54) on the sighting of the black eagle. In the list of birds the black eagle was included along with a question (?) mark but on account of a typographical mistake it was left out and probably hence not mentioned in the editorial note. Both myself and my companion Mr Michael Jennings (who is working on the Atlas of Breeding Birds of Arabia for over 10 years) sighted the eagle and with its large size, large wings, all black plumage and bright yellow cere and feet, we both suspected the bird as the "black eagle". I am fairly familiar with this bird because while studying barbets (*Megalaima* spp.) at Periyar Tiger Reserve, Kerala (1977-1980) the black eagle used to be a common species on most days record.

In fact at times some birds do travel far off their normal ranges under certain circumstances and Mr Khachar's comment is correct that such sightings deserve special note. My view is further supported by a note on pied harrier at Nalsarovar, Gujarat, by Dilhas Jafri (NB Vol.35(3) : 56) in which Mr Khachar has been quoted as describing the sighting and photographing the pied harrier at Nalsarovar as "a rare phenomenon".

Despite being largely an arid country, Saudi Arabia is very rich in Biodiversity and consists of some very suitable habitats for raptors. The Asir highlands arising from 1800 to over 3000 m receives good amount of rainfall and is well vegetated largely by Juniper forests. So far 25 species of birds of prey (including vultures) have been recorded from this area. Even from Riyadh region, predominantly a desert, 26 species of birds of prey have been recorded. (A Stagg 1994 Birds of the Riyadh Region) and at times up to 16 species can be sighted on a single day bird watching (Yahya, H S A - Birdwatching in Riyadh area; Saudi Gazette, June 19, 1995).



ERRATA

In the January/February 1995 issue, the Note by Ameen Ahmed refers to the long-billed vulture and not the white-backed vulture.

In the May/June 1995 issue, page 53, the Burachapori RF has an area of 44 sq.km. and not 444 sq.km.

ARRIVAL OF GREY WAGTAIL IN THE KANHA NATIONAL PARK. RAVISHANKER KANOJE, Forest Ranger (Kanha Tiger Reserve), At & Post Mukki, Via Baihar, Dist Balaghat (MP) 481 111

Grey Wagtail (*Motacilla cinerea*) is a migratory bird in India, first winter visitors, arrive in the peninsula about the end of August (Ali and Ripley 1989). This bird has been observed by Guntert & Homberger (1973) and Panwar (n.d.), Newton, Breeden & Norman (1986) recorded this species from January to May and October in the Kanha National Park. I saw a pair of this species near Supkhar (22° 11' North and 80° 56' East) in the Park dated 30th August 1995. This is the earliest arrival of the Grey Wagtail noticed in the Kanha National park.

References

- Ali, S. and Ripley, S.D. (1989) : Compact handbook of the Birds of India and Pakistan, Delhi, Oxford University Press, Oxford, New York.
- Guntert, M. and Homberger, D. (1973) : Die vogelwelt des Kanha Nationalparks Ende der Monsun-Regenzeit. IN kurt.f.
- Newton, P.N., Breeden, S. and Norman, G.J. (1986) : The Birds of Kanha Tiger Reserve, Madhya Pradesh, India. Journal Bombay Natural History Society, Vol.83(3).
- Panwar, H.S. (n.d.) : Management Plan for Kanha Tiger Reserve M.P. 1973-74 to 1978-79 M.P. Forest Department, Mimeo.



NOTES ON RAPTORS DEATH DUE TO VEHICULAR TRAFFIC IN AGRA DISTRICT, UTTAR PRADESH. BRIJ KISHOR GUPTA, The Coimbatore Zoological Park & Conservation Centre, "Pioneer House", Peelamedu Post, Coimbatore 641 004, T.N., India

I happened to spend two weeks at Agra and was able to do a road survey for 70 km daily during December 1994. The main objective of the survey was to find out the dead raptors lying on the road. I found carcasses of 3 shikras, 12 white-backed vultures, 1 serpent eagle, 1 black shouldered kite and 3 pariah kites. The maximum concentration of dead birds was found in a stretch of 20 km, where there is a dense road-side plantation of *Azadiracta*, *Dalbergia*, *Ficus*, *Sisyrinchium* and *Acacia*. Usually the birds die because of high speed of vehicles and dashing to the vehicles. There were other birds also found dead on the road. These birds include house crow, jungle crow, rose ringed parakeets, Indian roller, house sparrow, common myna. This observation also revealed that the sighting of birds of prey is lesser in correlation to the previous studies done by the Department of Zoology, Dayalbagh Educational Institute, Agra during 1991-92. A few of the injured raptors were taken to the local veterinary hospital by villagers but none of them survived.



Please participate in
Asian Midwinter Waterfowl Census
7 - 21, January 1996

WORLD PHEASANT ASSOCIATION DATABASE.
DHANANJAY KATJU [Research Associate] C/o W.W.F. INDIA,
 Secretariat, 172-B, Lodi Estate, New Delhi 110 003

With increase in the flow of galliform related information, the World Pheasant Association is formalising its data storage and retrieval capabilities. The information regarding galliform records is now maintained in a database which will need to be updated constantly. You can also contribute towards building up of this information system by sending in whatever galliform related information you possess on the attached form. *Kindly take care to fill in one form for one species and one record.* You can either photocopy the blank sample sheet into as many species and locations you have information about or write to me for spare forms.

World Pheasant Association Database. Please send your replies to: **Dhananjay Katju, World Pheasant Association, C/o 172-B Lodi Estate, New Delhi 110 003**

- 1 Name of the species :
- 2 Name of the sub-species [where relevant] :
- 3 Reference [Name of the source of information - book, paper, personal observation etc.] :
- 4 Area description [Name of forest/area, village, district, state, etc.] :
- 5 Latitude of the location [in degrees and minutes] :
- 6 Longitude of the location [in degrees and minutes] :
- 7 Gazetteer [Your source of coordinates (latitudes/longitudes)] :
- 8 Accuracy [How accurate are the co-ordinates] accurate (correctly placed)/Close (within 10' of correct locality)/Vague (within 16 of the correct locality). (Tick one)
- 9 Location type [Whether the site is a village, National Park, Sanctuary, lake, river, forest] :
- 10 Record year [when the observation was made] :
- 11 Altitude [in meters] :
- 12 Type of record [sighted, photographed, tape recorded] :
- 13 Certainty of record [record reliable; unreliable] :
- 14 Habitat [Habitat type like lowland tropical forest; sub-tropical forest; scrub forest; temperate forest; Agricultural land, grassland etc.] :
- 15 Status of Habitat [extremely well protected/good protection/moderate human pressure; heavy human pressure/degraded (tick one)] :
- 16 Abundance [Any reference to numbers i.e. 3 males and 2 females etc.] :



Book Review

BIRD DIVERSITY AND CONSERVATION. Editors: **ABRAHAM VERGHESE, SRIDHAR S, CHAKRAVARTHY A K, 1995.** Ornithological Society of India, Navbharat Enterprises, Seshadripuram, Bangalore 560 020, India]

This is a compilation of papers after a seminar that Ornithological Society of India held at Aranya Bhavan in Bangalore, where 300 participants included ornithologists, birdwatchers, environmentalists, foresters and policy makers all on a common platform. The book comprises of recommendations and suggestions of the working groups as also guest lectures and inaugural speech.

The Worldwide Fund for Nature financed this publication as it is meant to be a source of reference on conservation, but

there is birdlore, fascinating insights, little known data, as also some sad facts contributed by ecology luminaries, avid field workers and a bird photographer, among others. Since the contributors are mostly volunteers from various walks of life and this is a compendium, the tone, content and standard varies from chapter to chapter and includes one that is full of algebraic formulae to estimate bird population based on scientifically acceptable methodologies.

In effective land use planning, to take cognisance of the ecological potential of our lands, birds can provide data on our environment and they play a role, in our agricultural country to keep down pests and rodents, help cross pollination of flowers and scatter seeds. By taking interest in ornithology, Futehally opines, decision makers would get an insight into the working of nature and many environmental problems would become easier to solve. Happily, the seminar had become possible due to close partnership and financial/administrative support of the department of ecology and environment and other officials of the government of Karnataka.

Due to their overall ecological importance, birds are the focus in this book, and as Futehally summarises, "some species have become rare due to excessive hunting pressures, while there are indirect threats of pesticide poisoning." He lists conclusions arrived at, on which species are well studied, and by whom (eg Great Black Woodpecker - Salim Ali School of Ecology), which need to be studied more, which are the ones about which nothing is known (white bellied Heron, masked Finfoot, Slater's Monal, White-winged Black Tit, Rd-faced Malkoha, Ceylon Frogmouth, etc) as also critically threatened protected areas including, Point Calimere and Anamalai Sanctuaries. Some habitat zones for priority conservation came under specific focus including four in Karnataka - Chikmagalur-Muthodi Sanctuary, Bababudan Range, B.R. Hills, Charamadi Ghats and in Tamil Nadu, Top Slip and Vedanthangal. The latter, protected since 1798, is threatened by a hotel coming up within a kilometre of the sanctuary.

In his absorbing essay on watching birds, Dr Madhav Gadgil of IISc, Bangalore gives insights, as in the case of Bandipur *mahouts* who, like all people living close to the earth, have a deep knowledge. The *mahouts* already knew what American researchers later discovered about Ficus trees - that they provide a year-round supply of fruit and are therefore a critical resource. Such native knowledge tends to be ignored.

There are other contributors, including the editors who advocate supplementing census counts with data on habitat quality, and Tara Gandhi, who provides material about bird aided natural regeneration of vegetation. Waterbirds disperse seeds over enormous distance, and one study done in 1950, recorded 102 plant genera from erstwhile Mysore State that birds dispersed. Locusts are killed in thousands by the White Stork (*Ciconia ciconia*) and the Great Horned Owl can consume several rats or mice during a single night's hunt. Birds excreta or guano, are important fertilisers, as "in smaller tanks like Nellapathu, Koothankulam and Vedanthangal" where the fertiliser value has long been reorganised by agriculturists who use the water for irrigating crops.

There is a chapter each on Ranganthittu and the floods there, the cranes and the raptors (eagles, hawks, falcons etc.) as bioindicators. Of the latter, Rishad Naoroji gives fascinating facts: "Mechan building is a tricky business ... construction should begin only after the eggs have hatched as raptors are more prone to desert their eggs." We have the Himalayan

vultures that weigh 12 kg and falconets that weigh just 50 grams!

S Sridhar sings joys of bird photography and warns: "Some overzealous photographers, often in their haste to beat the deadline for a competition, manipulate nesting habitats resulting in nest failure. Such unscrupulous practices need vigilant scrutiny." And Vivek Menon gives appalling facts about bird trade - smuggling of peacocks by culling off their crests and transporting plumes, all traded in large amounts. In shipping, only a small percentage of birds survive the ordeal of journey as cargo.

For the Karnataka visitor, 'account of the seminar participants' field trip would serve as a guide to Kokre Bellur, Ranganthittu and to the 28 acre resort conserved since 1989 by A.N. Yellappa Reddy at Ramanagaram for traditional sacred herbs, shrubs and trees associated with the Hindu, Muslim, Sikh and Christian religions.

Put together essentially by volunteers with government and NGO help, this compilation would interest the lay reader. And hopefully, policy makers will not turn a deaf ear to the message conveyed here in various ways: By the onslaught on our environment, we are hurting ourselves, and self-interest dictates that we need to mend our ways.

Arun Bhatia

[The Times of India, Bangalore, Sat., Aug. 5, 1995]



Announcement

THE INTERNATIONAL ARCTIC EXPEDITION OF RUSSIAN ACADEMY OF SCIENCES

Invite Volunteers for the Season 1996

The International Arctic Expedition (IAE) of the Institute of Ecology and Evolution, Russian Academy of Sciences, is currently one of the leading teams for ornithological research in the Russian Arctic. Since 1988, more than 40 expedition groups visited remote areas of the Russian North to study and protect birds. Wide co-operation with universities, institutions and individuals from 16 countries (the Netherlands, Germany, Great Britain, France, Sweden, Poland, Norway, Finland, South Africa, U.S.A., Australia, New Zealand, Switzerland, Canada, Brazil and Ukraine) made a productive work possible and resulted in publication of already more than 70 scientific papers.

Planning of activities for 1996 is already started:

SOUTH TAIMYR EXPEDITION (CENTRAL SIBERIA).

Multisubject ornithological research are planned in the southern tundra, forest-tundra and alpine tundra of Putorana Mountains. The main aims of the Expedition are: the search for lesser white-fronted goose and other protected bird species (White-billed diver, golden and white-tailed eagles, Gyrfalcon peregrine falcon and sabin's gull,

etc.), wader population study and bird census techniques comparison.

South Taimyr is a good place for observations on red-breasted goose, rough-legged buzzard, bar-tailed godwit, spotted redshank, golden and ringed plovers, dunlin, wood and pectoral sandpipers, temminck's and little stints, phalaropes etc. Grey-headed tattler, Tereck and broad-billed sandpipers and long-billed dowitcher also can be found in the area. Little, Lapland and Pallas's reed buntings, red-throated and pechora pipits, Siberian accentor etc. are among common passerine species.

KOLGUYEV ISLAND AND TIMAN COAST EXPEDITION (BARENTS SEA). Expedition for wader ringing at the breeding grounds and studies on barnacle and whitefronted geese. These are background works for the creation of future nature reserve. The area have the highest densities of geese mentioned above and several wader species for the whole European tundra. Several areas on the island and the coast are planned to be visited. Some coastal tidal areas could be attractive for wader ringing on the autumn passage.

YANA DELTA EXPEDITION (YAKUTIA). A reconnaissance expedition for faunistic research, wader ringing and search for Black Brant. Yana Delta, one of ornithologically "blank spots" of the whole circumpolar Arctic, lies in the westernmost parts of the range of Siberian crane, spectacled eider and Ross's gull. Common waders in Delta: Pectoral, sharp-tailed and wood sandpiper, dunlin, bar-tailed godwit, long-billed dowitcher, golden plover, red-necked and grey phalaropes, temminck's stint etc. More rare species - spotted redshank, curlew and broad-billed sandpipers. Nice collection of other tundra birds like 4 diver species, 3 species of skuas, snowy owl, peregrine falcon, pechora pipit, Pallas's reed and little buntings etc. also inhabit tundras of the Yana Delta.

PROFESSIONALS AND QUALIFIED AMATEURS ready for field trips and tent life in the North are invited to take part in the expedition. Participation in the research programme could be combined in reasonable proportion with birdwatching, sightseeing and environmental education. All expeditions will work for June - August, minimal time for participation is about 3-4 weeks, preferably 1.5 month. IAE will cover some general costs including part of helicopter rent price. The travel costs and organisation fee are covered individually by participants.

STUDENTS can participate with individual research projects in the field of joint interest of their Universities and IAE. Research priorities for 1996: wader population ecology; geese breeding biology; population dynamics of arctic passerines; relations of lemmings and birds of prey; **COMPARISON OF CENSUS TECHNIQUES IN TUNDRA BIRDS.** People with the experience of transect and point counts are especially welcomed.

All questions could be addressed to Eugeny Syroechkovski Jr (IAE ornithological research co-ordinator), Institute of Ecology and Evolution, Russian, Acad. Sci., 117071, Leninskiy prosp. 33, Moscow, Russia, Fax: (7 095) 124 79 32 or (7 095) 203 56 32; phone (7 095) 246 71 54.

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Cover : Indian Skimmer (*Rynchops albicollis*) at nest. This dark brown capped bird has a highly specialized long and high red bill to catch fish. The bird operates in clear expanse of water free from weeds by skimming the surface, with the larger lower mandible submerged while cutting through water, leaving scarcely a ripple. Once widespread in South and South East Asia, skimmers have declined drastically, with placid rivers becoming too polluted for them to operate. This photograph was taken on the sand banks of river Yamuna in Delhi in 1966. The ceaseless twittering cry of the Indian Skimmer has since ceased along many rivers of North India and is presently declared a Red-data Bird.

Photo - Peter Jackson

